Multi-Protocol On-board Ethernet Print Server and Wireless (IEEE 802.11b/g) Ethernet Print Server

NETWORK USER'S GUIDE

HL-5350DN
HL-5370DW
HL-5380DN

Please read this manual thoroughly before using the machine. Keep the CD-ROM in a convenient place so you can use it quickly if you need to.

Please visit us at http://solutions.brother.com/ where you can get product support, the latest driver updates and utilities, and answers to frequently asked questions (FAQs) and technical questions.

Note: Not all models are available in all countries.

Version A
ENG

Symbols used in this guide

We use the following icons throughout this User's Guide:

IMPORTANT	IMPORTANT describes procedures you must follow or avoid to prevent possible printer problems or printer damage, or damage to other objects.
Note	Notes tell you how you should respond to a situation that may arise or give tips about how the current operation works with other features.

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IMPORTANT NOTE

- This product is approved for use in the country of purchase only.
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- Windows® XP in this document represents Windows® XP Professional, Windows® XP Professional x64 Edition and Windows® XP Home Edition.
- Windows Server® 2003 in this document represents Windows Server® 2003 and Windows Server® 2003 x64 Edition.
- Windows Vista® in this document represents all editions of Windows Vista®.
- The printer illustration is based on HL-5370DW.

Brother numbers

IMPORTANT

For technical and operational assistance, you must call the country where you purchased the machine. Calls must be made ***from within*** that country.

For Customer Service

In USA 1-877-BROTHER (1-877-276-8437)
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- Service center locator (USA)

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If you have any comments or suggestions, please write to us at:

In USA	Printer Customer Support Brother International Corporation 7905 North Brother Boulevard Bartlett, TN 38133
In Canada	Brother International Corporation (Canada), Ltd. - Marketing Dept. 1 Hôtel de Ville Dollard des Ormeaux, QC H9B 3H6 Canada
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Internet address

Brother Global Website: http://www.brother.com/

For Frequently Asked Questions (FAQs), Product Support, Driver Updates and Utilities: http://solutions.brother.com/

Ordering accessories and supplies

In USA 1-877-552-MALL (1-877-552-6255)

1-800-947-1445 (fax)

http://www.brothermall.com/

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1 Introduction

Overview

Your Brother machine can be shared on a 10/100 MB wired or IEEE 802.11b/802.11g wireless Ethernet network using the internal network print server. The print server provides printing services for Windows® 2000/XP/XP Professional x64 Edition, Windows Vista®, Windows Server® 2003/2008, Windows Server® 2003 x64 Edition supporting the TCP/IP protocols and Mac OS X 10.3.9 or greater supporting TCP/IP. The following chart shows what network features and connections are supported by each operating system.

Operating Systems	Windows® 2000/XP Windows® XP Professional x64 Edition Windows Vista® Windows Server® 2003/2008 Windows Server® 2003 x64 Edition	Mac OS X 10.3.9 or greater
10/100BASE-TX Wired Ethernet (TCP/IP)	✔	✔
IEEE 802.11b/g Wireless Ethernet (TCP/IP) [1]	✔	✔
Printing	✔	✔
BRAdmin Light	✔	✔
BRAdmin Professional 3 [2]	✔	
Web BRAdmin [2]	✔	
BRPrint Auditor [2] [3]	✔	
Web Based Management (web browser)	✔	✔
Internet Printing (IPP)	✔	
Status Monitor [4]	✔	✔
Driver Deployment Wizard	✔	

1 Only the HL-5370DW has IEEE 802.11b/g Wireless Ethernet (TCP/IP) available.

2 BRAdmin Professional 3, Web BRAdmin and BRPrint Auditor are available as a download from http://solutions.brother.com/.

3 Available when using BRAdmin Professional 3 or Web BRAdmin with devices that are connected to your client PC via USB or parallel port.

4 For more information, see the *User's Guide* on the CD-ROM.

To use the Brother machine through a network, you need to configure the print server, and set up the computers you use.

Network features

Your Brother machine has the following basic network functions.

Network printing

The print server provides printing services for Windows® 2000/XP/XP Professional x64 Edition, Windows Vista® and Windows Server® 2003/2008 supporting TCP/IP protocols and Macintosh supporting TCP/IP (Mac OS X 10.3.9 or greater).

Management utilities

BRAdmin Light

BRAdmin Light is a utility for initial setup of Brother network connected devices. This utility can search for Brother products on your network, view the status and configure basic network settings, such as IP address. The BRAdmin Light utility is available for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 and Mac OS X 10.3.9 (or greater) computers. For installing BRAdmin Light on Windows®, please see the *Quick Setup Guide* we provided with the machine. For Macintosh users, BRAdmin Light will be installed automatically when you install the printer driver. If you have already installed the printer driver, you don't have to install it again.

For more information on BRAdmin Light, visit us at http://solutions.brother.com/.

BRAdmin Professional 3 (for Windows®)

BRAdmin Professional 3 is a utility for more advanced management of network connected Brother devices. This utility can search for Brother products on your network and view the device status from an easy to read explorer style window that changes color identifying the status of each device. You can configure network and device settings along with the ability to update device firmware from a Windows® computer on your LAN. BRAdmin Professional 3 can also log activity of brother devices on your network and export the log data in an HTML, CSV, TXT or SQL format.

For users who want to monitor locally connected printers, install the BRPrint Auditor software on the client PC. This utility allows you to monitor printers that are connected to a client PC via the USB or parallel from BRAdmin Professional 3.

For more information and downloading, visit us at http://solutions.brother.com/.

Web BRAdmin (for Windows®)

Web BRAdmin is a utility for managing network connected Brother devices on your LAN and WAN. This utility can search for Brother products on your network, view the status and configure the network settings. Unlike BRAdmin Professional 3, which is designed for Windows® only, Web BRAdmin is a server based utility that can be accessed from any client PC with a web browser that supports JRE (Java Runtime Environment). By installing the Web BRAdmin server utility on a PC running IIS [1], connect to the Web BRAdmin server, which then communicates with the device itself.

For more information and downloading, visit us at http://solutions.brother.com/.

[1] Internet Information Server 4.0 or Internet Information Services 5.0/5.1/6.0/7.0

BRPrint Auditor (for Windows®)

The BRPrint Auditor software brings the monitoring power of Brother network management tools to locally connected machines. This utility allows a client computer to collect usage and status information from a machine connected via the parallel or USB interface. The BRPrint Auditor can then pass this information to another computer on the network running BRAdmin Professional 3 or Web BRAdmin 1.45 or greater. This allows the administrator to check items such as page counts, toner and drum status and the firmware version. In addition to reporting to Brother network management applications this utility can E-mail the usage and status information directly to a predefined E-mail address in a CSV or XML file format (SMTP Mail support required). The BRPrint Auditor utility also supports E-mail notification for reporting warning and error conditions.

Web Based Management (web browser)

Web Based Management (web browser) is a utility for managing network connected Brother devices, using the HTTP (Hyper Text Transfer Protocol). This utility can view the status of Brother products on your network and configure the machine or network settings using a standard web browser that is installed on your computer.

For more information, see *Chapter 10: Web Based Management*.

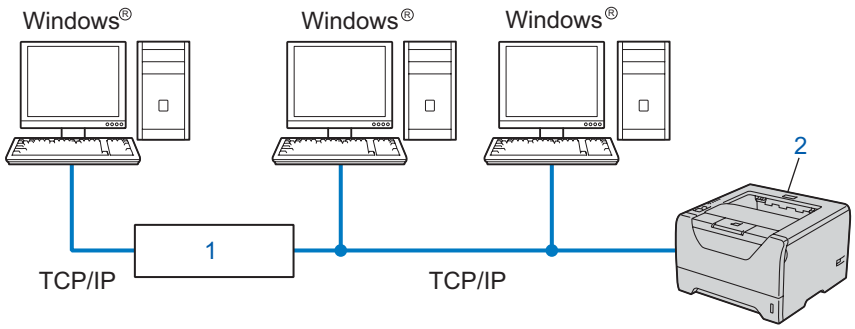
For increased security Web Based Management also support HTTPS. For more information see *Managing your network printer securely* on page 145.

Types of network connections

Network connection example

Peer-to-Peer printing using TCP/IP

In a Peer-to-Peer environment, each computer directly sends and receives data to each device. There is no central server controlling file access or printer sharing.



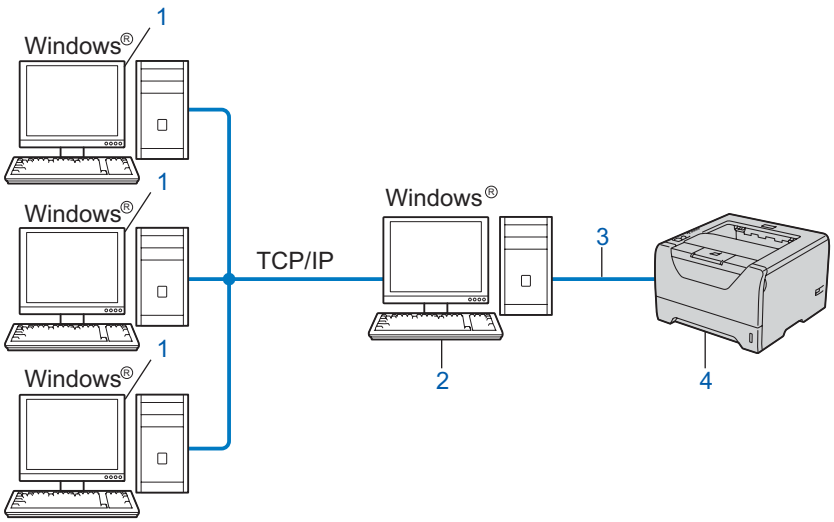
1) Router

2) Network printer (your machine)

- In a smaller network of 2 or 3 computers, we recommend the Peer-to-Peer printing method as it is easier to configure than the Network Shared printing method. See *Network Shared printing* on page 5.
- Each computer must use the TCP/IP Protocol.
- The Brother machine needs to have an appropriate IP address configuration.
- If you are using a router, the Gateway address must be configured on the computers and the Brother machine.

Network Shared printing

In a Network Shared environment, each computer sends data via a centrally controlled computer. This type of computer is often called a “Server” or a “Print Server”. Its job is to control the printing of all print jobs.



1) Client computer

2) Also known as “Server” or “Print server”

3) TCP/IP, USB or parallel

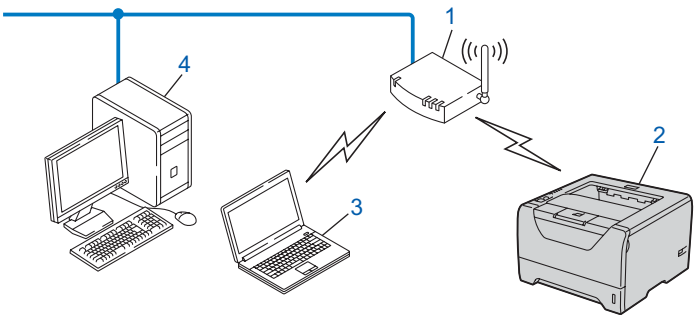
4) Printer (your machine)

- In a larger network, we recommend a Network Shared printing environment.
- The “Server” or the “Print server” must use the TCP/IP print protocol.
- The Brother machine needs to have an appropriate IP address configuration unless the machine is connected via the USB or the parallel interface at the server.

Wireless network connection examples (For HL-5370DW)

Connected to a computer with an access point on the network (Infrastructure mode)

This type of network has a central access point at the heart of the network. The access point can also act as a bridge or a gateway to a wired network. When the Brother wireless machine (your machine) is part of this network, it receives all print jobs via an access point.



1) Access point

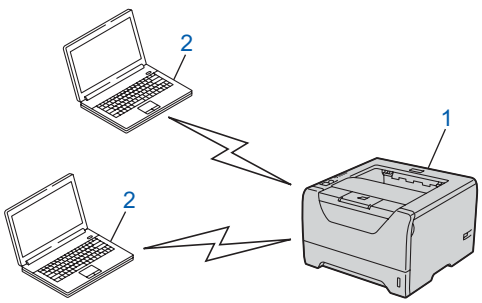
2) Wireless network printer (your machine)

3) Wireless capable computer communicating with the access point

4) Wired computer which is not wireless capable connected to the access point with the Ethernet cable

Connected to a wireless capable computer without an access point on the network (Ad-hoc mode)

This type of network does not have a central access point. Each wireless client communicates directly with each other. When the Brother wireless machine (your machine) is part of this network, it receives all print jobs directly from the computer sending the print data.



1) Wireless network printer (your machine)

2) Wireless capable computer

Protocols

TCP/IP protocols and functions

Protocols are the standardized sets of rules for transmitting data on a network. Protocols allow users to gain access to network connected resources.

The print server used on this Brother product supports the TCP/IP (Transmission Control Protocol/Internet Protocol) protocols.

TCP/IP is the most popular set of protocols used for communication such as Internet and E-mail. This protocol can be used in almost all operating systems such as Windows®, Windows Server®, Mac OS X and Linux®. The following TCP/IP protocols are available on this Brother product.

Note

- You can configure the protocol settings by using the HTTP interface (web browser).
  See *How to configure the machine settings using Web Based Management (web browser)* on page 127.
- For information about the security protocols, see *Security protocols* on page 143.

DHCP/BOOTP/RARP

By using the DHCP/BOOTP/RARP protocols, the IP address can be automatically configured.

Note

To use the DHCP/BOOTP/RARP protocols, please contact your network administrator.

APIPA

If you do not assign an IP address manually (using the control panel of the machine (for HL-5380DN) or the BRAdmin applications) or automatically (using a DHCP/BOOTP/RARP server), the Automatic Private IP Addressing (APIPA) protocol will automatically assign an IP address from the range 169.254.1.0 to 169.254.254.255.

ARP

Address Resolution Protocol performs mapping of an IP address to MAC address in a TCP/IP network.

DNS client

The Brother print server supports the Domain Name System (DNS) client function. This function allows the print server to communicate with other devices by using its DNS name.

NetBIOS name resolution

Network Basic Input/Output System name resolution enables you to obtain the IP address of the other device using its NetBIOS name during the network connection.

WINS

Windows Internet Name Service is an information providing service for the NetBIOS name resolution by consolidating an IP address and a NetBIOS name that is in the local network.

LPR/LPD

Commonly used printing protocols on a TCP/IP network.

SMTP client

Simple Mail Transfer Protocol (SMTP) client is used to send E-mails via the Internet or Intranet.

Custom Raw Port (default is Port9100)

Another commonly used printing protocol on a TCP/IP network. It enables interactive data transmission.

IPP

The Internet Printing Protocol (IPP Version 1.0) allows you to print documents directly to any accessible printer via the internet.

Note

For the IPPS protocol, see *Security protocols* on page 143.

mDNS

mDNS allows the Brother print server to automatically configure itself to work in a Mac OS X Simple Network Configured system. (Mac OS X 10.3.9 or greater).

Telnet

The Brother print server supports Telnet server for command line configuration.

SNMP

The Simple Network Management Protocol (SNMP) is used to manage network devices including computers, routers and Brother network ready machines. The Brother print server supports SNMPv1, SNMPv2c and SNMPv3.

Note

For the SNMPv3 protocol, see *Security protocols* on page 143.

LLMNR

The Link-Local Multicast Name Resolution protocol (LLMNR) resolves the names of neighboring computers, if the network does not have a Domain Name System (DNS) server. The LLMNR Responder function works in both the IPv4 or IPv6 environment when using a computer that has the LLMNR Sender function such as Windows Vista®.

Web services

The Web Services protocol enables Windows Vista® users to install the Brother printer driver by right-clicking the machine icon from the **Network** folder.

See *Installation when using Web Services (For Windows Vista® users)* on page 185.

The Web Services also let you check the current status of the machine from your computer.

Web server (HTTP)

The Brother print server is equipped with a built in web server that allows you to monitor its status or change some of its configuration settings using a web browser.

Note

- We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1.
- For the HTTPS protocol, see *Security protocols* on page 143.

IPv6

This machine is compatible with the IPv6, the next generation internet protocol. For more information on the IPv6 protocol, visit http://solutions.brother.com/.

Other Protocol

LLTD

The Link Layer Topology Discovery protocol (LLTD) lets you locate the Brother machine easily on the Windows Vista® **Network Map**. Your Brother machine will be shown with a distinctive icon and the node name. The default setting for this protocol is Off. You can activate LLTD using the BRAdmin Professional 3 utility software. Visit the download page for your model at http://solutions.brother.com/ to download BRAdmin Professional 3.

2 Configuring your machine for a network

Overview

Before using your Brother machine in a network environment, you must install the Brother software and also configure the appropriate TCP/IP network settings on the machine itself. In this chapter, you will learn the basic steps required to print over the network using TCP/IP protocol.

We recommend that you use the Brother installer on the Brother CD-ROM to install the Brother software as this will guide you through the software and network installation. Please follow the instructions in the supplied *Quick Setup Guide*.

Note

For HL-5380DN users

If you do not wish to, or are unable to use the automatic installer or any of Brother's software tools, you can also use the machine's control panel to change network settings.
For more information, see *NETWORK menu (For HL-5380DN)* on page 111.

IP addresses, subnet masks and gateways

To use the machine in a networked TCP/IP environment, you need to configure its IP address and subnet mask. The IP address you assign to the print server must be on the same logical network as your host computers. If it is not, you must properly configure the subnet mask and the gateway address.

IP address

An IP address is a series of numbers that identifies each device connected to a network. An IP address consists of four numbers separated by dots. Each number is between 0 and 255.

■ Example: In a small network, you would normally change the final number.

- 192.168.1.1
- 192.168.1.2
- 192.168.1.3

How the IP address is assigned to your print server:

If you have a DHCP/BOOTP/RARP server in your network (typically UNIX®, Linux or Windows® 2000/XP, Windows Vista® or Windows Server® 2003/2008 network) the print server will automatically obtain its IP address from that server.

Note

On smaller networks, the DHCP server may also be the Router.

For more information on DHCP, BOOTP and RARP, see:-
Using DHCP to configure the IP address on page 178

Using BOOTP to configure the IP address on page 179
Using RARP to configure the IP address on page 180.

If you do not have a DHCP/BOOTP/RARP server, the Automatic Private IP Addressing (APIPA) protocol will automatically assign an IP address from the range 169.254.1.0 to 169.254.254.255. For more information on APIPA, see *Using APIPA to configure the IP address* on page 180.

If the APIPA protocol is disabled, the default IP address of a Brother print server is 192.0.0.192. However, you can easily change this IP address number to match with the IP address details of your network. For information on how to change the IP address, see *Setting the IP address and subnet mask* on page 13.

Subnet mask

Subnet masks restrict network communication.

■ Example: Computer 1 can talk to Computer 2

- Computer 1

  IP Address: 192.168. 1. 2

  Subnet Mask: 255.255.255.000

- Computer 2

  IP Address: 192.168. 1. 3

  Subnet Mask: 255.255.255.000

Where the 0 is in the Subnet mask, there is no limit to communication at this part of the address. What this means in the above example is, we can communicate with any device that has an IP address that begins with 192.168.1.x. (where x.x. are numbers between 0 and 255).

Gateway (and router)

A gateway is a network point that acts as an entrance to another network and sends data transmitted via the network to an exact destination. The router knows where to direct data that arrives at the gateway. If a destination is located at an external network, the router transmits data to the external network. If your network communicates with other networks, you may need to configure the Gateway IP address. If you do not know the Gateway IP address then contact your Network Administrator.

Step by step chart

1 Configure the TCP/IP settings.

- Configure the IP address → See page 13
- Configure the subnet mask → See page 13
- Configure the gateway → See page 13

2 Change the print server settings.

- Using the BRAdmin Light utility → See page 16
- Using the BRAdmin Professional 3 utility → See page 16
- Using the Web Based Management (web browser) → See page 17
- Using the control panel (For HL-5380DN) → See page 17
- Using other methods → See page 17

Setting the IP address and subnet mask

Using the BRAdmin Light utility to configure your machine as a network printer

BRAdmin Light

The BRAdmin Light utility is designed for initial setup of the Brother network connected devices. It also can search for Brother products in a TCP/IP environment, view the status and configure basic network settings, such as IP address. The BRAdmin Light utility is available for Windows® 2000/XP, Windows Vista®, Windows Server® 2003/2008 and Mac OS X 10.3.9 or greater.

How to configure your machine using the BRAdmin Light utility

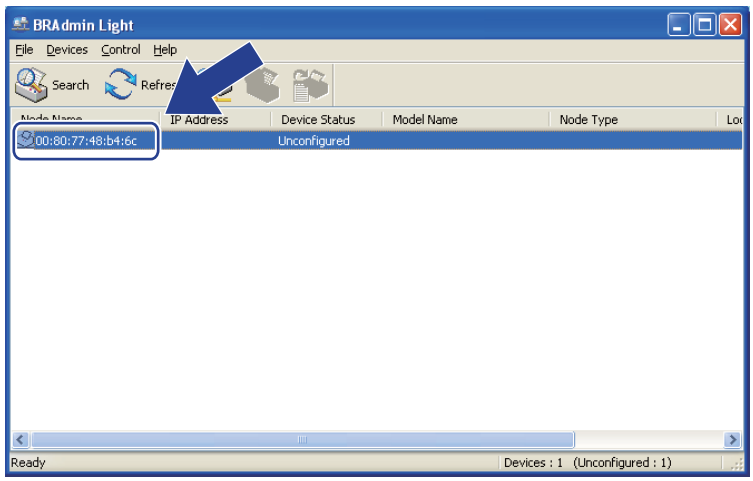
Note

- Please use the BRAdmin Light utility that was supplied on the CD-ROM of your Brother product. You can also download the latest Brother BRAdmin Light utility from http://solutions.brother.com/.
- If you require more advanced printer management, use the latest BRAdmin Professional 3 utility that is available as a download from http://solutions.brother.com/. This utility is only available for Windows® users.
- If you are using a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.
- Node name: Node name appears in the current BRAdmin Light window. The default node name of the print server in the machine is “BRNxxxxxxxxxxxx” for a wired network or “BRWxxxxxxxxxxxx” for a wireless network. (“xxxxxxxxxxxx” is your machine’s MAC Address / Ethernet Address.)
- The default password for Brother print servers is “**access**”.

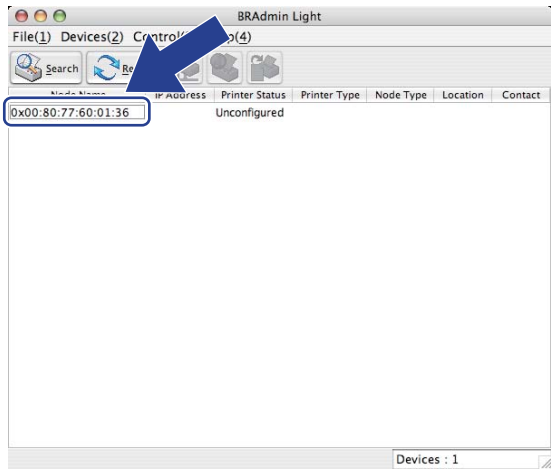
1. Start the BRAdmin Light utility.
   - For Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008
     Click **Start** / **All Programs** [1] / **Brother** / **BRAdmin Light** / **BRAdmin Light**.
     [1] **Programs** for Windows® 2000 users
   - For Mac OS X 10.3.9 or greater
     Double-click **Macintosh HD** (Startup Disk) / **Library** / **Printers** / **Brother** / **Utilities** / **BRAdmin Light.jar** file.
2. BRAdmin Light will search for new devices automatically.

3 Double-click the unconfigured device.

Windows®



Macintosh

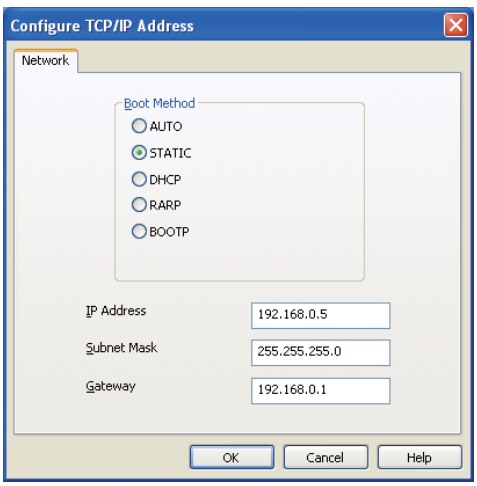


Note

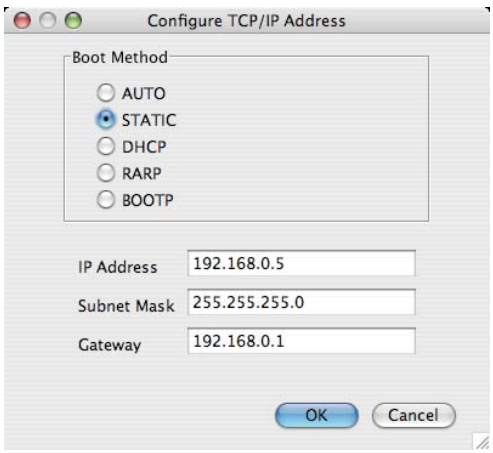
- If the print server is set to its factory default settings (if you don't use a DHCP/BOOTP/RARP server), the device will appear as **Unconfigured** in the BRAdmin Light utility screen.
- You can find the node name and MAC Address (Ethernet Address) by printing out the Printer Settings Page.
  See *Printing the Printer Settings Page* on page 117.

4 Choose **STATIC** from **Boot Method**. Enter the **IP Address**, **Subnet Mask** and **Gateway** (if needed) of your print server.

Windows®



Macintosh



5 Click **OK**.

6 With the correctly programmed IP address, you will see the Brother print server in the device list.

Using the control panel to configure your machine for a network (For HL-5380DN)

You can configure your machine for a network using the control panel NETWORK menu.
See *NETWORK menu (For HL-5380DN)* on page 111.

Using other methods to configure your machine for a network

You can configure your machine for a network using other methods.
See *Other ways to set the IP address (For advanced users and administrators)* on page 178.

Changing the print server settings

Note

For wireless network users, you need to configure the wireless settings to change the print server settings. See *Configuring your machine for a wireless network (For HL-5370DW)* in Chapter 3.

Using the BRAdmin Light utility to change the print server settings

1. Start the BRAdmin Light utility.
   - For Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008
     Click **Start**/**All Programs** [1]/**Brother**/**BRAdmin Light**/**BRAdmin Light**.

     [1] **Programs** for Windows® 2000 users
   - For Mac OS X 10.3.9 or greater
     Double-click **Macintosh HD** (Startup Disk) / **Library** / **Printers** / **Brother** / **Utilities** / **BRAdmin Light.jar** file.
2. Choose the print server which you want to change the settings.
3. Choose **Network Configuration** from the **Control** menu.
4. Enter a password. The default password is “**access**”.
5. You can now change the print server settings.

Note

If you want to change more advanced settings, use the BRAdmin Professional 3 utility that is available as a download from http://solutions.brother.com/. (For Windows® only)

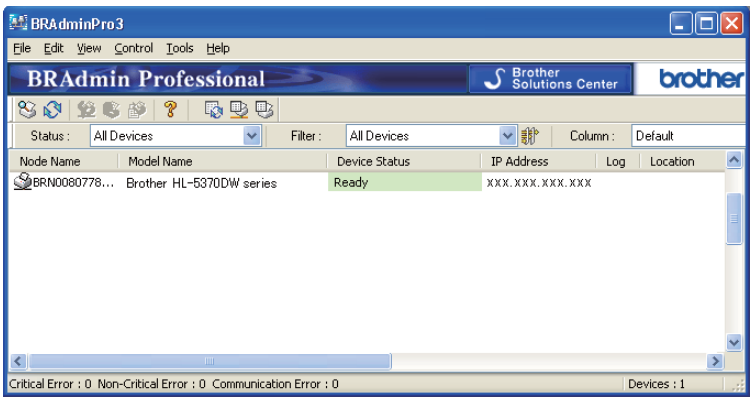
Using the BRAdmin Professional 3 utility to change the print server settings (For Windows®)

Note

- Please use the latest version of the BRAdmin Professional 3 utility that is available as a download from http://solutions.brother.com/. This utility is only available for Windows® users.
- If you are using a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.
- Node Name: Node name appears in the current BRAdmin Professional window. The default node name of the print server in the machine is “BRNxxxxxxxxxxxx” for a wired network or “BRWxxxxxxxxxxxx” for a wireless network. (“xxxxxxxxxxxx” is your machine’s MAC Address / Ethernet Address.)

1. Start the BRAdmin Professional 3 utility (from Windows® 2000/XP, Windows Vista® or Windows Server® 2003/2008), by clicking **Start**/**All Programs** [1]/**Brother Administrator Utilities**/**Brother BRAdmin Professional 3**/**BRAdmin Professional 3**.

   [1] **Programs** for Windows® 2000 users



2. Choose the print server which you want to configure.
3. Choose **Configure Device** from the **Control** menu.
4. Enter a password if you have set one. The default password is “**access**”.
5. You can now change the print server settings.

Note

- If the print server is set to its factory default settings without using a DHCP/BOOTP/RARP server, the device will appear as APIPA in the BRAdmin Professional 3 utility screen.
- You can find the node name and MAC Address / Ethernet Address (IP Address above) by printing out the Printer Settings Page.
  See *Printing the Printer Settings Page* on page 117.

Using Web Based Management (web browser) to change the print server settings

A standard web browser can be used to change your print server settings using the HTTP (Hyper Text Transfer Protocol).
See *How to configure the machine settings using Web Based Management (web browser)* on page 127.

Using the control panel to change the print server settings (For HL-5380DN)

You can configure and change the print server settings using the control panel `NETWORK` menu.
See *NETWORK menu (For HL-5380DN)* on page 111.

Using other methods to change print server settings

You can configure your network printer using other methods.
See *Other ways to set the IP address (For advanced users and administrators)* on page 178.

3 Configuring your machine for a wireless network (For HL-5370DW)

Overview

To connect your printer to your wireless network, you need to follow the steps in the *Quick Setup Guide* or the *Network User's Guide*. We recommend that you use the Brother installer application on the CD-ROM which we have provided with the printer. By using this application, you can easily connect your machine to your wireless network and install the network software and printer driver which you need to complete the configuration of your machine for a wireless network. You will be guided by the on-screen instructions until you are able to use your Brother wireless network machine.

If you want to configure your printer without using the Brother installer application, please read this chapter for more details on how to configure the wireless network settings. For information on TCP/IP settings, see *Setting the IP address and subnet mask* on page 13. For Wireless configuration using the one-push wireless setting mode, see *Chapter 6*. For Wireless configuration using the PIN Method of Wi-Fi Protected Setup, see *Chapter 7*.

Note

- To achieve optimum results with normal every day document printing, place the Brother machine as close to the network access point/router as possible with minimal obstructions. Large objects and walls between the two devices as well as interference from other electronic devices can affect the data transfer speed of your documents.

  Due to these factors, wireless may not be the best method of connection for all types of documents and applications. If you are printing large files, such as multi-page documents with mixed text and large graphics, you may want to consider choosing wired Ethernet or parallel for a faster data transfer, or USB for the fastest throughput speed.
- Although the Brother machine can be used in both a wired and wireless network, only one connection method can be used at a time.

Wireless network terms and concepts

If you want to use your machine in a wireless network you must configure the machine to match the settings of the existing wireless network. This section provides some of the main terms and concepts of these settings, which may be helpful when you configure your machine for a wireless network.

SSID (Service Set Identifier) and channels

You need to configure the SSID and a channel to specify the wireless network you want to connect to.

SSID

Each wireless network has its own unique network name and it is technically referred to as SSID or ESSID (Extended Service Set Identifier). The SSID is a 32-byte or less value and is assigned to the access point. The wireless network devices you want to associate to the wireless network should match the access point. The access point and wireless network devices regularly send wireless packets (referred to as a beacon) which has the SSID information. When your wireless network device receives a beacon, you can identify the wireless network that is close enough for the radio waves to reach your device.

Channels

Wireless networks use channels. Each wireless channel is on a different frequency. There are up to 14 different channels that can be used when using a wireless network. However, in many countries the number of channels available are restricted. For more information, see *Wireless network (for HL-5370DW)* on page 187.

Authentication and encryption

Most wireless networks use some kind of security settings. These security settings define the authentication (how the device identifies itself to the network) and encryption (how the data is encrypted as it is sent on the network). **If you do not correctly specify these options when you are configuring your Brother wireless device, it will not be able to connect to the wireless network.** Therefore care must be taken when configuring these options. Please refer to the information below to see which authentication and encryption methods your Brother wireless device supports.

Authentication methods

The Brother machine supports the following methods:

- Open System

  Wireless devices are allowed to access the network without any authentication.

- Shared Key

  A secret pre-determined key is shared by all devices that will access the wireless network. The Brother machine uses the WEP keys as the pre-determined key.

■ WPA-PSK/WPA2-PSK

Enables a Wi-Fi Protected Access Pre-shared Key (WPA-PSK/WPA2-PSK), which enables the Brother wireless machine to associate with access points using TKIP for WPA-PSK or AES for WPA-PSK and WPA2-PSK encryption (WPA-Personal).

■ LEAP

Cisco LEAP (Light Extensible Authentication Protocol) has been developed by Cisco Systems, Inc. which uses a user ID and password for authentication.

■ EAP-FAST

EAP-FAST (Extensible Authentication Protocol - Flexible Authentication via Secured Tunnel) has been developed by Cisco Systems, Inc. which uses a user ID and password for authentication, and symmetric key algorithms to achieve a tunneled authentication process.

The Brother machine supports the following inner authentications:

- EAP-FAST/NONE

  EAP-FAST authentication for CCXv3 networks. Does not use an inner authentication method.

- EAP-FAST/MS-CHAPv2

  EAP-FAST authentication for CCXv4 networks. Uses MS-CHAPv2 for the inner authentication method.

- EAP-FAST/GTC

  EAP-FAST authentication for CCXv4 networks. Uses GTC for the inner authentication method.

Encryption methods

Encryption is used to secure the data that is sent over the wireless network. The Brother machine supports the following encryption methods:

■ None

No encryption method is used.

■ WEP

By using WEP (Wired Equivalent Privacy), the data is transmitted and received with a secure key.

■ TKIP

TKIP (Temporal Key Integrity Protocol) provides per-packet key mixing a message integrity check and rekeying mechanism.

■ AES

AES (Advanced Encryption Standard) is Wi-Fi® authorized strong encryption standard.

■ CKIP

The original Key Integrity Protocol for LEAP by Cisco Systems, Inc.

Network Key

There are some rules for each security method:

■ Open System/Shared Key with WEP

This key is a 64-bit or 128-bit value that must be entered in an ASCII or hexadecimal format.

- 64 (40) bit ASCII:

  Uses 5 text characters. e.g. “WSLAN” (this is case sensitive)
- 64 (40) bit hexadecimal:

  Uses 10 digits of hexadecimal data. e.g. “71f2234aba”
- 128 (104) bit ASCII:

  Uses 13 text characters. e.g. “Wirelesscomms” (this is case sensitive)
- 128 (104) bit hexadecimal:

  Uses 26 digits of hexadecimal data. e.g. “71f2234ab56cd709e5412aa2ba”

■ WPA-PSK/WPA2-PSK and TKIP or AES

Uses a Pre-Shared Key (PSK) that is 8 or more characters in length, up to a maximum of 63 characters.

■ LEAP

Uses User ID and Password.

- User ID: less than 64 characters in length.
- Password: less than 32 characters in length.

■ EAP-FAST

Uses User ID and Password.

- User ID: less than 64 characters in length.
- Password: less than 32 characters in length.

Step by step chart for wireless network configuration

For Infrastructure mode

1 **Confirm your network environment.** (See page 24.)

■ **Infrastructure mode**
Connected to a computer with an access point

or

■ **Ad-hoc mode** → See page 23.
Connected to a wireless capable computer without an access point

2 **Confirm your wireless network setup method.** (See page 25.)



Temporarily using a network cable

Using the **Brother installer application** (Recommended)

Using automatic wireless (one-push) method

Using the **one-push** wireless setting mode (if your wireless access point supports either SecureEasySetup™, Wi-Fi Protected Setup or AOSS™)

Using the **PIN Method** of Wi-Fi Protected Setup (if your wireless access point supports Wi-Fi Protected Setup)

3 **Configure your machine for a wireless network.** (See page 28.)

Configuring your machine for a wireless network

(For Windows®) See page 29. (For Macintosh) See page 61.

(For Windows®) See page 40. (For Macintosh) See page 71.

See page 90.

See page 100.

Installing the printer driver

(For Windows®) See page 58. (For Macintosh) See page 88.

(For Windows®) See page 93. (For Macintosh) See page 97.

(For Windows®) See page 103. (For Macintosh) See page 107.

OK! **Wireless configuration and installing printer driver have been completed.**

For Ad-hoc mode

1 **Confirm your network environment.** (See page 24.)

■ **Ad-hoc mode**	or	■ **Infrastructure mode** ➡ See page 22
Connected to a wireless capable computer without an access point		Connected to a computer with an access point

2 **You need to configure the wireless network settings by using the Brother installer application.**



Using the **Brother installer application** (Recommended)

3 **Configure your machine for a wireless network.** (See page 28.)

Configuring your machine for a wireless network

(For Windows®) See page 46.

(For Macintosh) See page 77.

Installing the printer driver

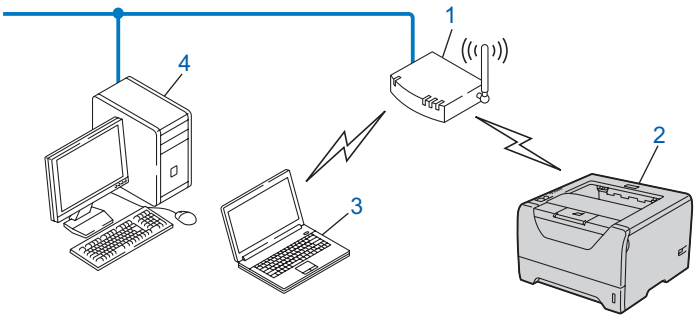
(For Windows®) See page 58.

(For Macintosh) See page 88.

OK! **Wireless configuration and installing printer driver have been completed.**

Confirm your network environment

Connected to a computer with an access point in the network (Infrastructure mode)



1) Access point

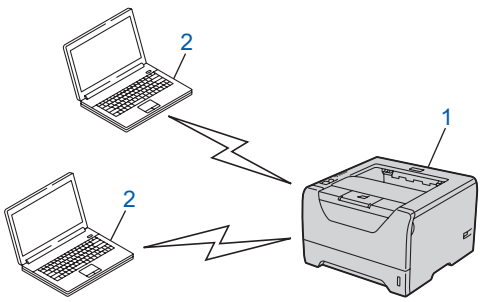
2) Wireless network printer (your machine)

3) Wireless capable computer connected to the access point

4) Wired computer which is not wireless capable connected to the access point with an Ethernet cable

Connected to a wireless capable computer without an access point in the network (Ad-hoc mode)

This type of network does not have a central access point. Each wireless client communicates directly with each other. When the Brother wireless machine (your machine) is part of this network, it receives all print jobs directly from the computer sending the print data.



1) Wireless network printer (your machine)

2) Wireless capable computer

Note

We do not guarantee the wireless network connection with Windows Server® products in Ad-hoc mode.

Confirm your wireless network setup method

There are three methods to configure your wireless network machine. Use the Brother installer application on the CD-ROM (recommended). Use the one-push wireless setting mode or use the PIN Method of Wi-Fi Protected Setup. The setup process will be different depending on your network environment.

Note

If you configure the wireless network settings in Ad-hoc mode, use the Brother installer application on the CD-ROM we have provided with the machine.

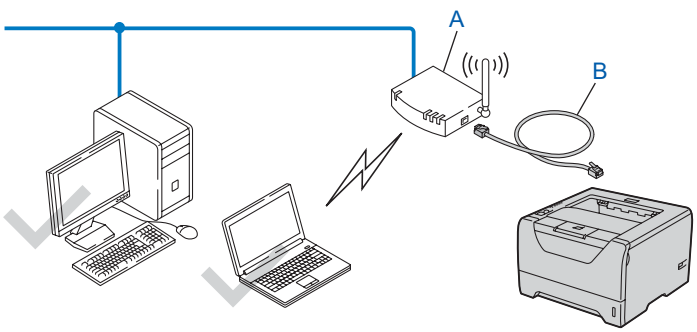
Configuration using the Brother installer application on the CD-ROM to configure your machine for a wireless network (Recommended)

We recommend that you use the Brother installer application on the CD-ROM we have provided with the machine. By using this application, you can easily connect your machine to your wireless network and install the network software and printer driver which you need to complete the configuration of your machine for a wireless network. You will be guided by the on-screen instructions until you are able to use your Brother wireless network machine. You must know your wireless network settings before you proceed with this installation.

Configuration temporarily using a network cable

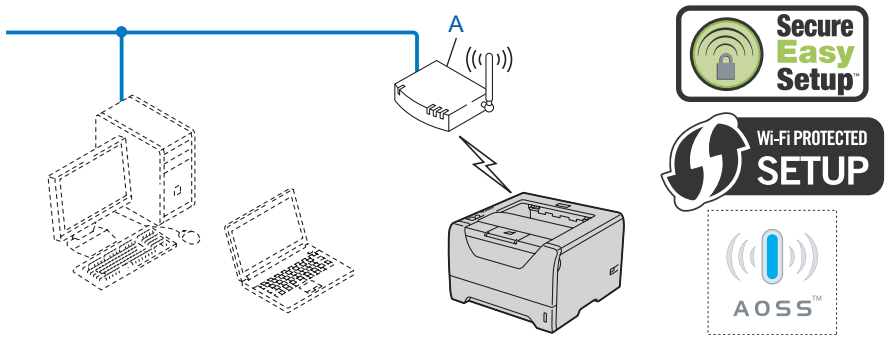
You need to temporarily use an Ethernet cable when you configure your Brother printer in this method. The Ethernet cable is not a standard accessory.

If there is an Ethernet Hub or Router in the same network as the wireless access point (A) of your machine, you can temporarily connect the Hub or Router to the machine using an Ethernet cable (B), this is an easy way to configure the machine. You can then remotely configure the machine from a computer on the network.



Configuration using the one-push wireless setting mode to configure your machine for a wireless network (Infrastructure mode only)

If your wireless access point (A) supports either SecureEasySetup™, Wi-Fi Protected Setup (PBC [1]) or AOSS™, you can configure the machine without a computer.

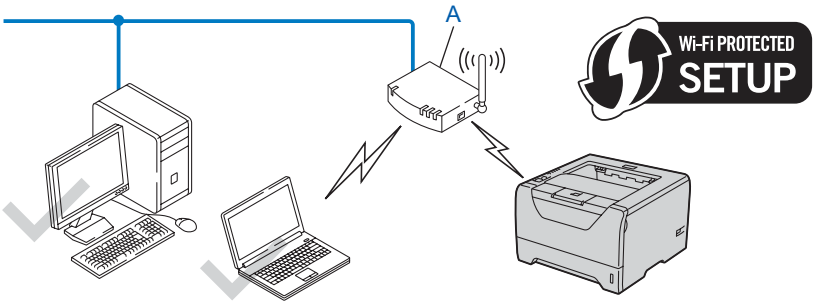


[1] Push Button Configuration

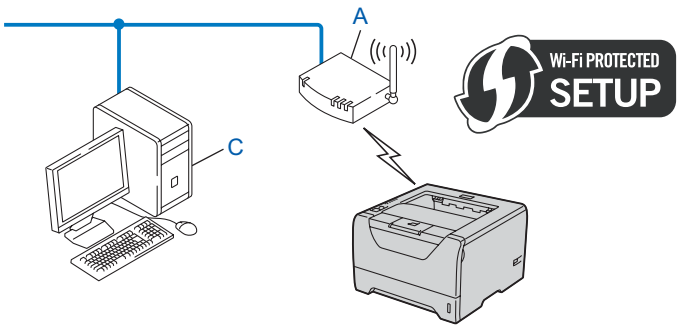
Configuration using the PIN Method of Wi-Fi Protected Setup to configure your machine for a wireless network (Infrastructure mode only)

If your wireless access point (A) supports Wi-Fi Protected Setup, you can also configure using the PIN Method of Wi-Fi Protected Setup. (See *Wireless configuration using the PIN Method of Wi-Fi Protected Setup (For HL-5370DW)* in Chapter 7.)

■ Connection when the wireless access point (router) (A) doubles as a Registrar [1].



■ Connection when another device (C), such as a computer is used as a Registrar [1].



[1] The Registrar is a device that manages the wireless LAN.

Configure your machine for a wireless network

Using the Brother installer application on the CD-ROM to configure your machine for a wireless network (Recommended)

For installation, see *Wireless configuration for Windows® using the Brother automatic installer application (For HL-5370DW)* in Chapter 4 or *Wireless Configuration for Macintosh using the Brother installer application (For HL-5370DW)* in Chapter 5.

Using the one-push wireless setting mode to configure your machine for a wireless network

For installation, see *Wireless configuration using the one-push wireless setting mode (For HL-5370DW)* in Chapter 6.

Using the PIN Method of Wi-Fi Protected Setup to configure your machine for a wireless network

For installation, see *Wireless configuration using the PIN Method of Wi-Fi Protected Setup (For HL-5370DW)* in Chapter 7.

4 Wireless configuration for Windows® using the Brother automatic installer application (For HL-5370DW)

Configuration in Infrastructure mode

Before configuring the wireless settings

IMPORTANT

The following instructions will install your Brother machine in a network environment using the Brother installer application for Windows® found on the CD-ROM we have provided with the machine.

You must know your wireless network settings before you proceed with this installation. Make sure you take notes on all the current settings such as SSID, authentication and encryption of your wireless network environment. If you do not know them, contact your network administrator or the manufacturer of your access point/router.

Item	Example	Record the current wireless network settings
Communication mode: (Infrastructure)	Infrastructure	
Network name: (SSID, ESSID)	HELLO	
Authentication method: (Open System, Shared key, WPA-PSK [1], WPA2-PSK [1], LEAP, EAP-FAST)	WPA2-PSK	
Encryption mode: (None, WEP, TKIP, AES, CKIP)	AES	
Network key: (Encryption key, WEP key [2], Passphrase)	12345678	

[1] WPA/WPA2-PSK is a Wi-Fi Protected Access Pre-Shared Key, which lets the Brother wireless machine associate with access points using TKIP or AES encryption (WPA-Personal). WPA-PSK(TKIP or AES) and WPA2-PSK(AES) use a Pre-Shared Key (PSK) that is 8 or more characters in length, up to a maximum of 63 characters.

[2] The WEP key is for 64-bit encrypted networks or 128-bit encrypted networks and can contain both numbers and letters. If you do not know this information you should see the documentation provided with your access point or wireless router. This key is a 64-bit or 128-bit value that must be entered in an ASCII or HEXADECIMAL format.

For example:

64-bit ASCII: Uses 5 text characters e.g. “Hello” (this is case sensitive)
64-bit Hexadecimal: Uses 10 digits of hexadecimal data e.g. “71f2234aba”
128-bit ASCII: Uses 13 text characters e.g. “Wirelesscomms” (this is case sensitive)
128-bit Hexadecimal: Uses 26 digits of hexadecimal data e.g. “71f2234ab56cd709e5412aa3ba”

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118).

If you are using Windows® Firewall or a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

You need to temporarily use an Ethernet cable during configuration.

Configure the wireless settings

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Turn on your computer. (You must be logged on with Administrator rights.)
   Close any applications running before configuration.
4. Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically.
   Choose your printer model and the language.
5. Click **Install Printer Driver** on the menu screen.



Note

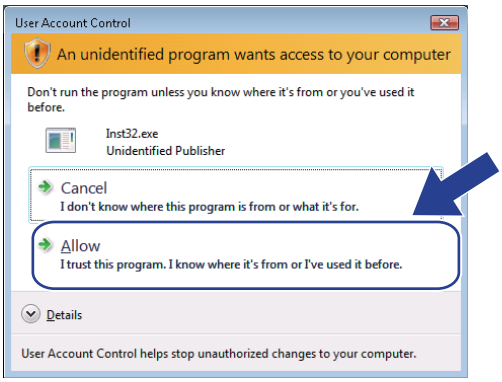
Choose the **Install Printer Driver** icon for your region.

6. Click **Wireless Network users**.

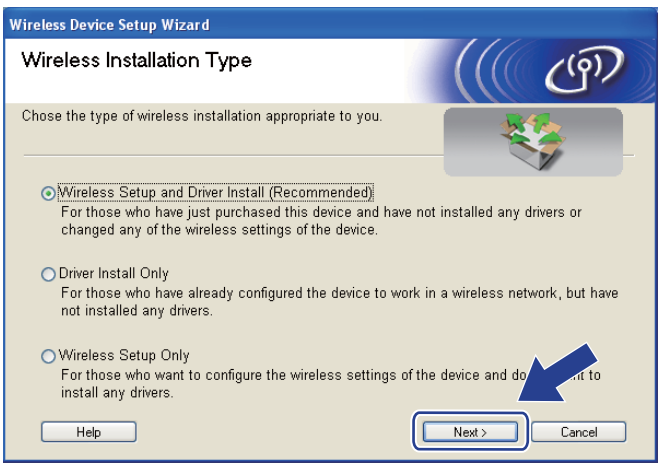


Note

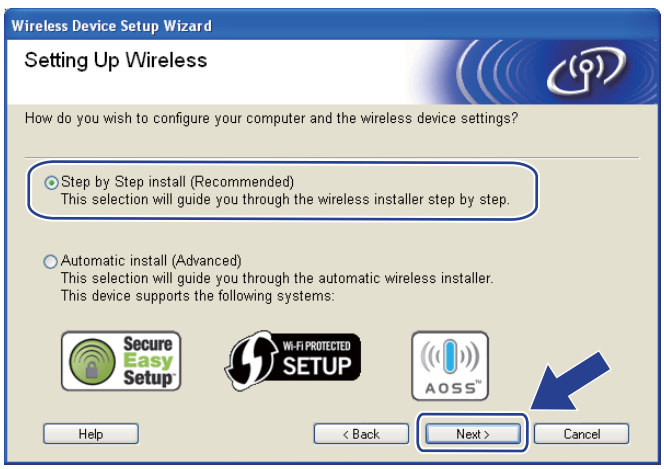
For Windows Vista®, when the **User Account Control** screen appears, click **Allow**.



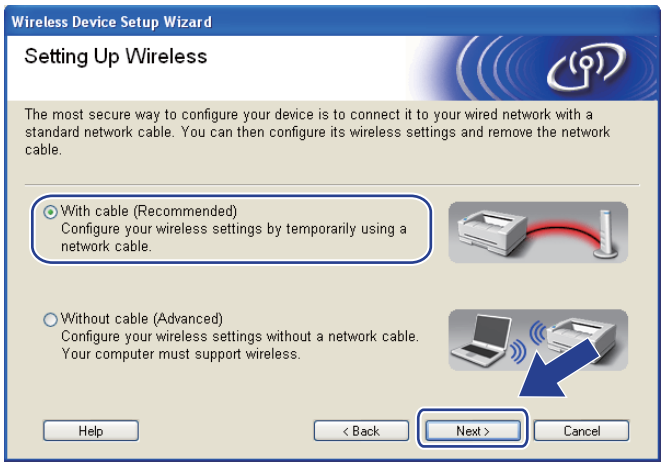
7 Choose **Wireless Setup and Driver Install (Recommended)** or **Wireless Setup Only**, and then click **Next**.



8 Choose **Step by Step install (Recommended)** and then click **Next**.

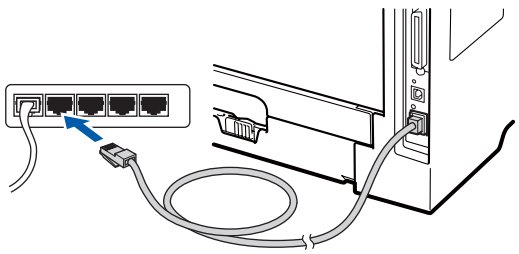


9 Choose **With cable (Recommended)** and then click **Next**.

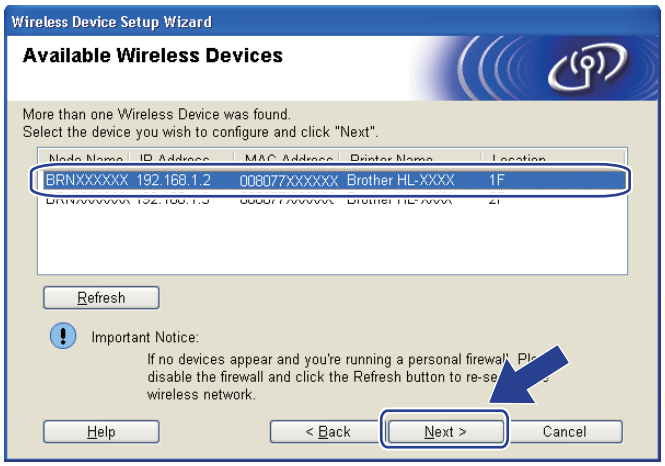


10 Connect the Brother wireless device to your access point using a network cable and click **Next**.





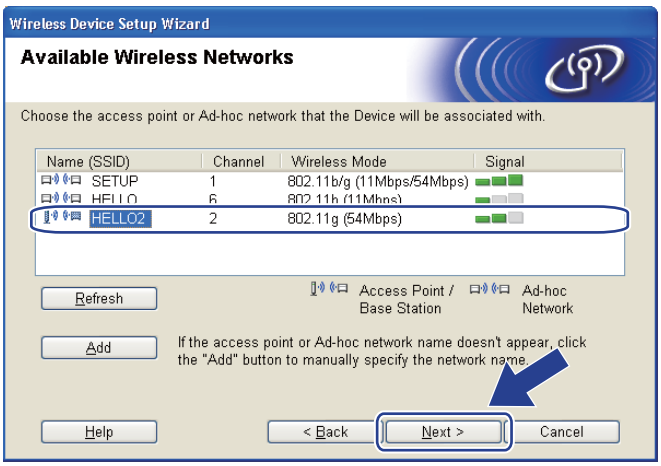
⓫ Choose the machine you wish to configure, and click **Next**. If the list is blank, check if the access point and the machine are powered on, and then click **Refresh**.



Note

- The default node name is “BRNxxxxxxxxxxxx”.
- You can find your printer’s MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

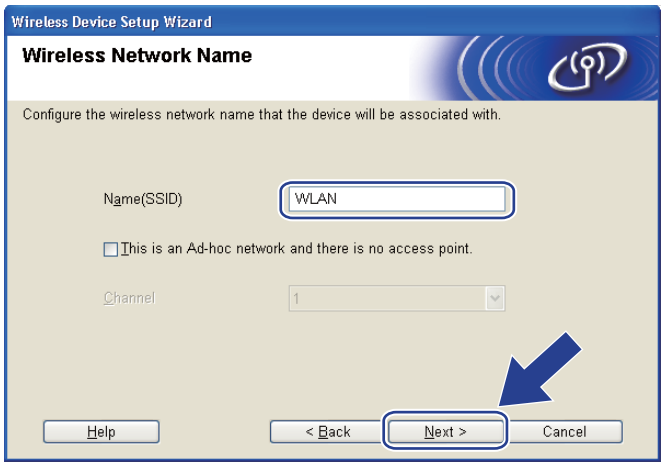
⓬ The wizard will search for wireless networks available from your machine. Choose the access point you wish to associate the machine with, and then click **Next**.



Note

- “**SETUP**” is the default SSID of the machine. Do not choose this SSID.
- If the list is blank, check that the access point has power and is broadcasting the SSID, and then see if the machine and the access point are within range for wireless communication. Then, click **Refresh**.

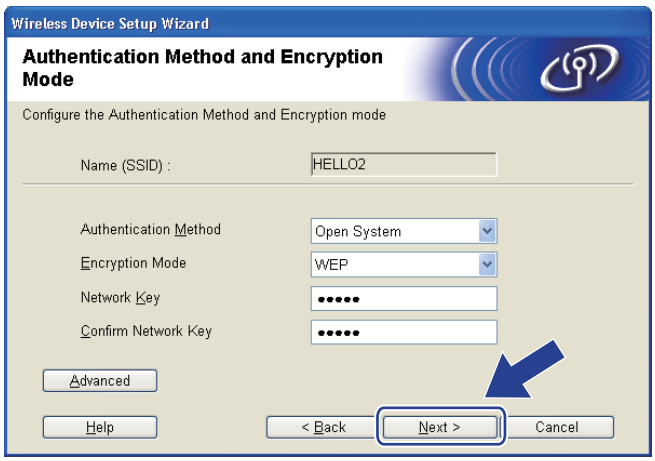
- If your access point is set to not broadcast the SSID you can manually add it by clicking the **Add** button. Follow the on-screen instructions for entering the **Name(SSID)** and then click **Next**.



13 If your network is not configured for Authentication and Encryption, the following screen will appear. To continue configuration, click **OK** and go to 15.



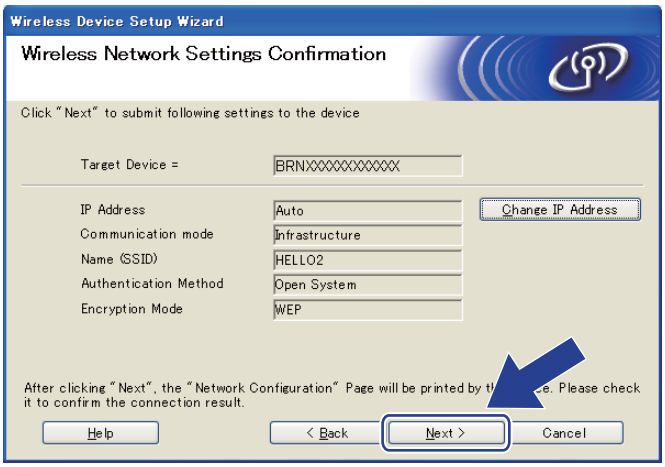
⓮ If your network is configured for Authentication and Encryption, the following screen will appear. **When configuring your Brother wireless machine, you must configure your machine to match the Authentication and Encryption settings you wrote down on page 29 for your existing wireless network.** Choose the **Authentication Method** and **Encryption Mode** from the pull-down menu in each setting box. Then enter the **Network Key** and **Confirm Network Key**, and then click **Next**.

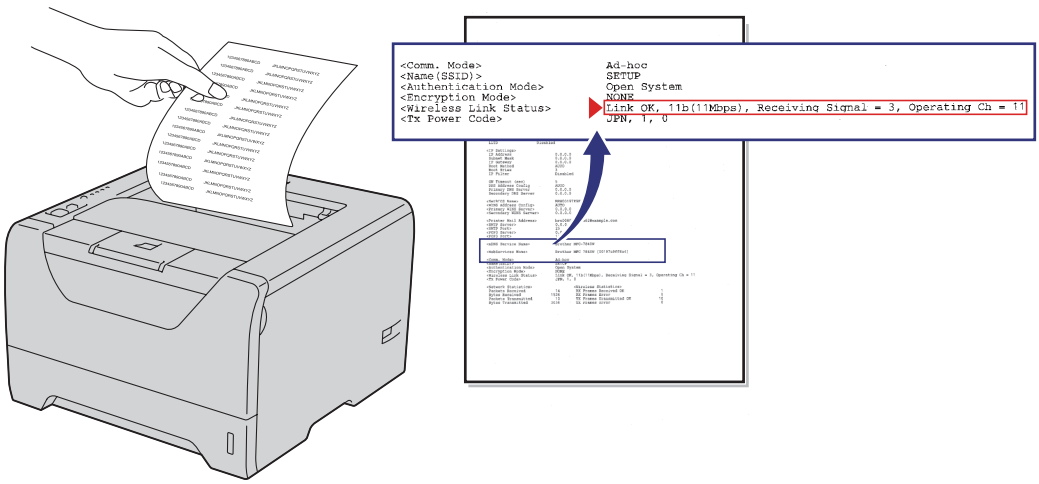


Note

- If you want to setup or configure additional WEP key indexes other than WEP key1, click **Advanced**.
- If you do not know the Authentication or Encryption settings for your network, contact your network administrator or the manufacturer of your access point/router.
- If you are using WEP and the printed Network Configuration page in ⓯ shows **Link OK** in the **Wireless Link Status**, but the machine is not found on your network, make sure you entered the WEP key correctly. The WEP key is case sensitive.

15 Click **Next**. The settings will be sent to your machine. The settings will remain unchanged if you click **Cancel**. The Network Configuration page will be printed.

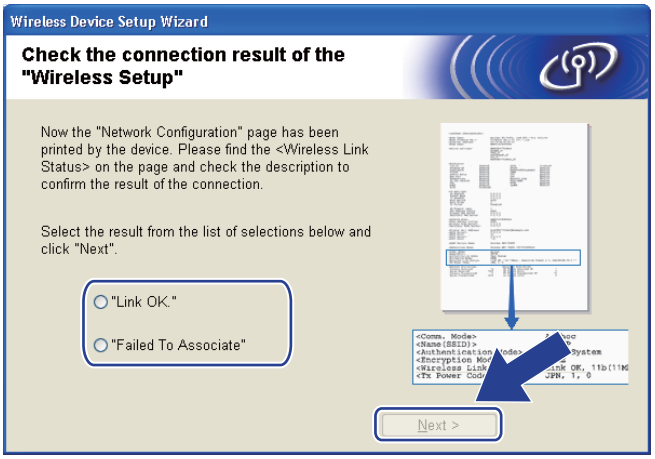




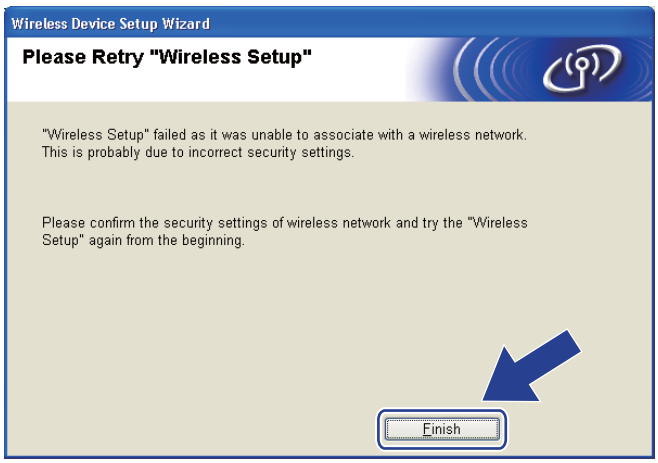
Note

- If you want to manually enter the IP address settings of your machine, click **Change IP Address** and enter the necessary IP address settings for your network.
- The wireless network setting will be automatically changed to enabled when the wireless settings are sent to your machine.

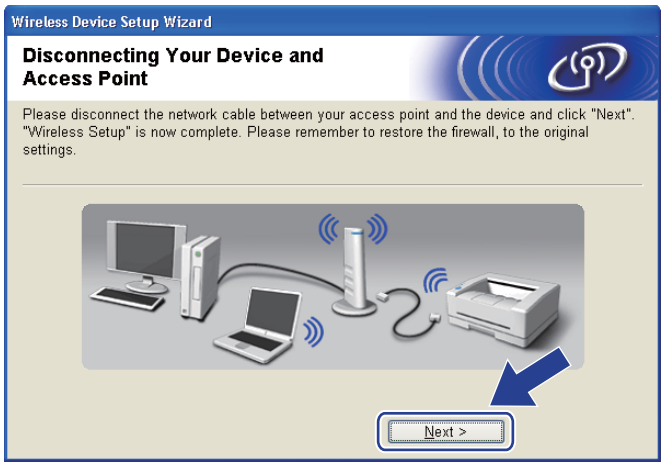
⑯ Check the printed Network Configuration page. Choose the status as it is shown for the **Wireless Link Status** on the Network Configuration page. Click **Next**.
If your status is **"Link OK."**, go to ⑱.
If your status is **"Failed To Associate"**, go to ⑰.



⑰ Click **Finish**. Wireless setup was unable to associate with a wireless network. This is probably due to incorrect security settings. Reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118). Confirm the security settings of your wireless network and try starting from ❻ again.



⓲ Disconnect the network cable between your access point (hub or router) and the machine, and click **Next** or **Finish**.



OK! **You have completed the wireless setup. If you chose to install the printer driver in step ❼, Go to *Installing the printer driver* on page 58.**

Configuration using the automatic wireless (one-push) method

If your wireless access point/router supports either SecureEasySetup™, Wi-Fi Protected Setup (PBC [1]) or AOSS™, you can configure the machine easily without knowing your wireless network settings. Your Brother machine has one-push wireless setting mode. This feature automatically detects which mode your access point uses for one-push configuration (SecureEasySetup™, Wi-Fi Protected Setup or AOSS™). By pushing a button on the wireless access point/router and the machine, you can setup the wireless network and security settings. See the user's guide for your wireless access point/router for instructions on how to access one-push mode.

[1] Push Button Configuration

Note

Routers or access points that support SecureEasySetup™, Wi-Fi Protected Setup or AOSS™ have the symbols shown below.







Before configuring the wireless settings

IMPORTANT

The following instructions will install your Brother machine in a network environment using the Brother installer application for Windows® found on the CD-ROM we have provided with the machine.

If you are going to connect your Brother machine to your network, we recommend that you contact your system administrator prior to installation.

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118).

If you are using Windows® Firewall or a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

Configure the wireless settings

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Turn on your computer. (You must be logged on with Administrator rights.)
   Close any applications running before configuration.
4. Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically.
   Choose your printer model and the language.
5. Click **Install Printer Driver** on the menu screen.



Note

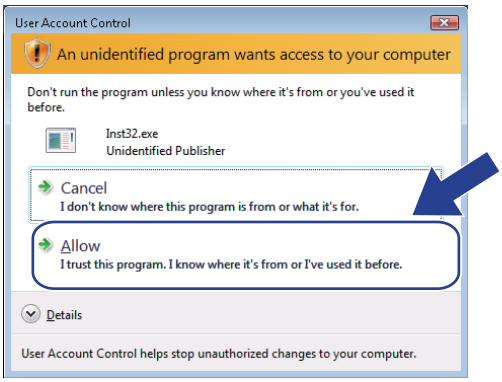
Choose the **Install Printer Driver** icon for your region.

6. Click **Wireless Network users**.

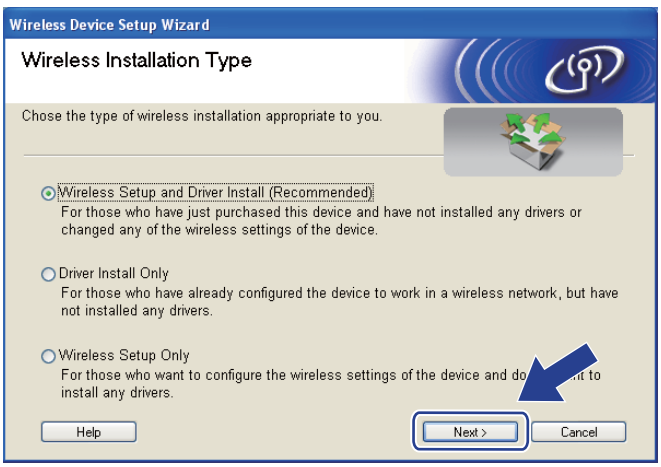


Note

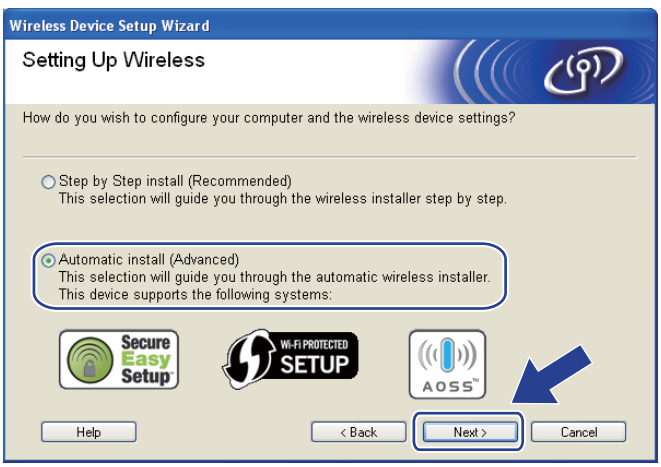
For Windows Vista®, when the **User Account Control** screen appears, click **Allow**.



7 Choose **Wireless Setup and Driver Install (Recommended)** or **Wireless Setup Only**, and then click **Next**.



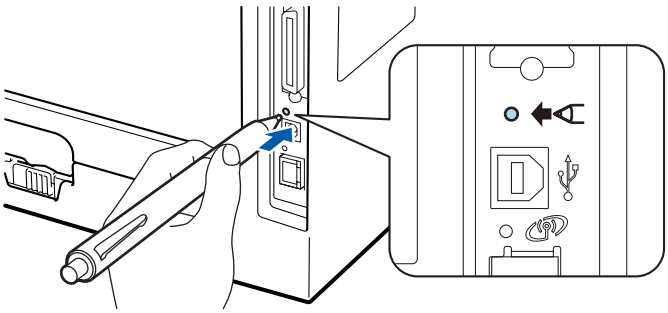
8 Choose **Automatic install (Advanced)** and click **Next**.



9 Confirm the on-screen message and click **Next**.



10 Press the wireless setup button located at the back of the machine for less than 2 seconds as shown in the illustration below. This will put the machine in one-push wireless setting mode. This feature will automatically detect which mode your access point uses for one-push configuration (SecureEasySetup™, Wi-Fi Protected Setup or AOSS™).



Note

- Make sure that the label covering the USB interface connector is removed.
- Use a pointy object such as a ballpoint pen to press the button.
- If you press the button for 3 seconds or more, the machine will change to the PIN Method of the Wi-Fi Protected Setup mode. See *How to configure your wireless machine, using the PIN Method of Wi-Fi Protected Setup* on page 100.

11 The machine starts the one-push wireless setting mode.
The machine will search for an access point that supports SecureEasySetup™, Wi-Fi Protected Setup or AOSS™ for 2 minutes.

12 Put your access point in the SecureEasySetup™ mode, Wi-Fi Protected Setup mode or AOSS™ mode, depending on what is supported by your access point. Please refer to the instruction manual that came with your access point.

⓭ Wait until the **Status** LED of your machine indicates `Connected`. The **Status** LED will turn on for 5 minutes. (See the table below) This indication means the machine has successfully connected to your access point/router. You can now use your machine in a wireless network.

If the LED indicates `Connection Fail` (See the table below), the machine has not successfully connected to your access point/router. Try starting from ⓾ again. If the same message is indicated again, reset the print server back to its factory default settings. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `No Access Point` (See the table below), the machine has detected no access point/router on your network. Make sure you place the Brother machine as close to the network access point/router as possible with minimal obstructions, and try starting from ⓾ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `Connection Error` (See the table below), the machine has detected more than 2 access points/routers on your network that have the SecureEasySetup™, the Wi-Fi Protected Setup mode or the AOSS™ mode enabled. Make sure that only one access point/router has the SecureEasySetup™ mode, Wi-Fi Protected Setup mode or the AOSS™ mode enabled and try starting from ⓾ again.

LED indications when using the one-push wireless setting mode

LEDs	Setting WLAN [1]	Connecting SES/WPS/ AOSS [1]	Connected [2]	Connection Fail [3]	No Access Point [3]	Connection Error [4]		
Back Cover	☐	☐	☐	☐	☐	☐		☐
Toner (Yellow)	☀	☀	☐	☐	☐	☐		☐
Drum (Yellow)	☐	☀	☐	☐	☐	☐	↔	☐
Paper (Yellow)	☐	☐	☐	☐	☀	☐		☐
Status (Red / Green)	☐	☐	■	☀	☀	☀		☐

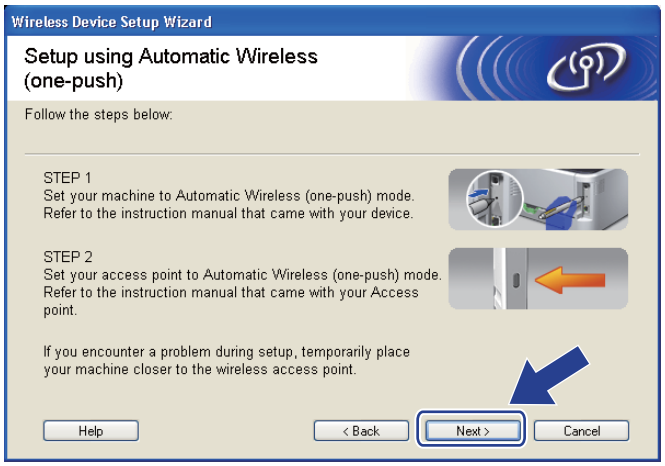
1 The LED will blink (turn on for 0.2 seconds and off for 0.1 second).

2 The LED will turn on for 5 minutes.

3 The LED will blink (turn on for 0.1 second and off for 0.1 second) for 30 seconds.

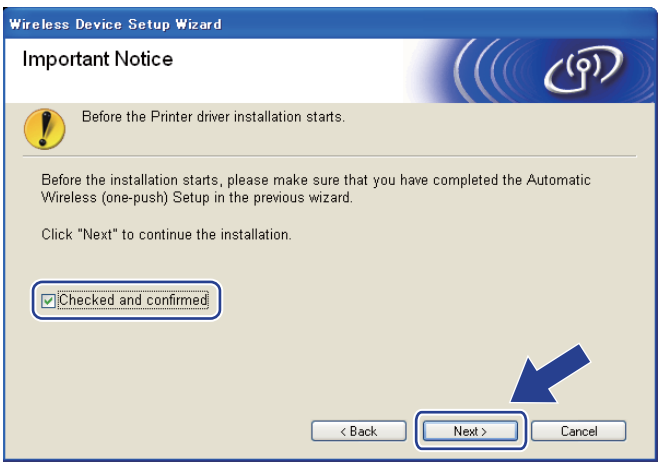
4 The LED will flash 10 times and then turn OFF for half a second. This pattern will repeat 20 times.

14 Click **Next** or **Finish**.



OK! **You have completed the wireless setup. If you chose to install the printer driver in step ❼, Go to the next step.**

15 Check the box after you confirm that you have completed the wireless settings, and then click **Next**. Go to *Installing the printer driver* on page 58.



Configuration in Ad-hoc mode

Before configuring the wireless settings

IMPORTANT

The following instructions will install your Brother machine in a network environment using the Brother installer application for Windows® found on the CD-ROM we have provided with the machine.

You must know your wireless network settings before you proceed with this installation. Make sure you take notes on all the current settings such as SSID, authentication and encryption of your wireless network environment. If you do not know them, contact your network administrator.

Item	Example	Record the current wireless network settings
Communication mode: (Ad-hoc)	Ad-hoc	
Network name: (SSID, ESSID)	HELLO	
Authentication method: (Open System)	Open System	
Encryption mode: (None, WEP)	WEP	
Network key: (Encryption key, WEP key [1], Passphrase)	12345	

[1] The WEP key is for 64-bit encrypted networks or 128-bit encrypted networks and can contain both numbers and letters. If you do not know this information you should see the documentation provided with your access point or wireless router. This key is a 64-bit or 128-bit value that must be entered in an ASCII or HEXADECIMAL format.

For example:

64-bit ASCII: Uses 5 text characters e.g. “Hello” (this is case sensitive)
64-bit Hexadecimal: Uses 10 digits of hexadecimal data e.g. “71f2234aba”
128-bit ASCII: Uses 13 text characters e.g. “Wirelesscomms” (this is case sensitive)
128-bit Hexadecimal: Uses 26 digits of hexadecimal data e.g. “71f2234ab56cd709e5412aa3ba”

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118).

If you are using Windows® Firewall or a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

Configure the wireless settings

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Turn on your computer. (You must be logged on with Administrator rights.)
   Close any applications running before configuration.
4. Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically.
   Choose your printer model and the language.
5. Click **Install Printer Driver** on the menu screen.



Note

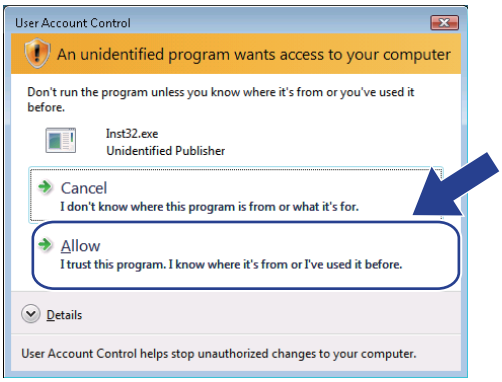
Choose the **Install Printer Driver** icon for your region.

6. Click **Wireless Network users**.

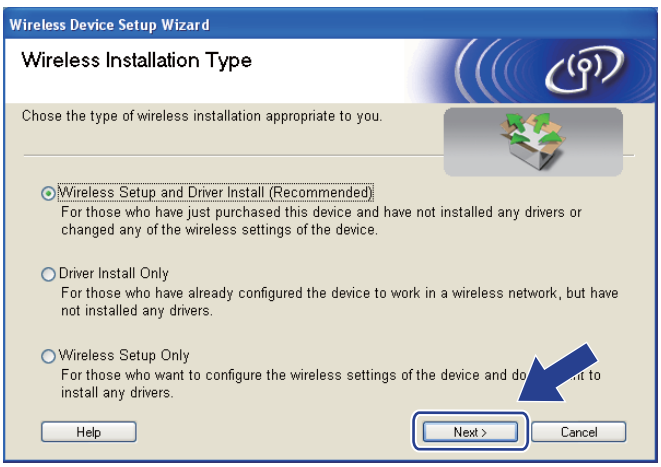


Note

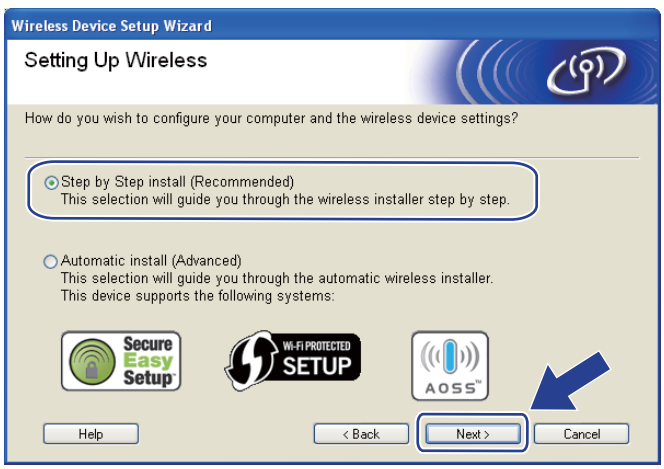
For Windows Vista®, when the **User Account Control** screen appears, click **Allow**.



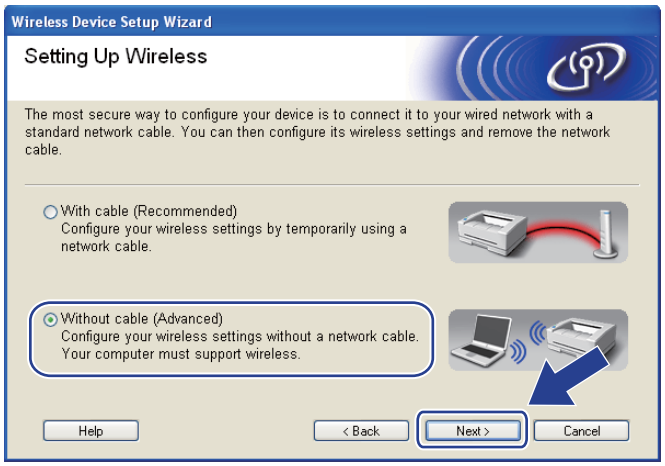
7 Choose **Wireless Setup and Driver Install (Recommended)** or **Wireless Setup Only**, and then click **Next**.



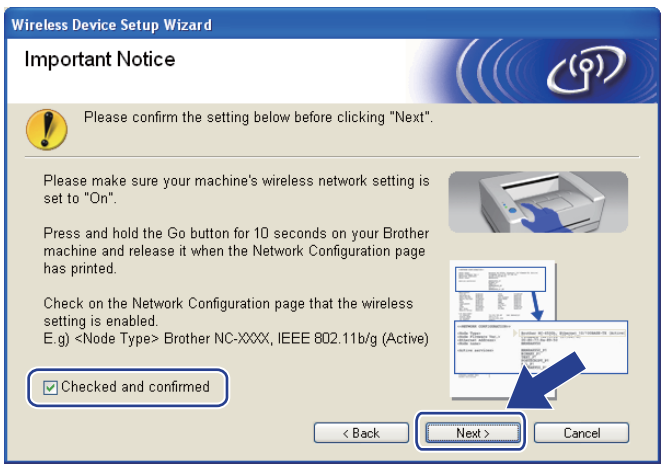
8 Choose **Step by Step install (Recommended)** and then click **Next**.



9 Choose **Without cable (Advanced)** and then click **Next**.

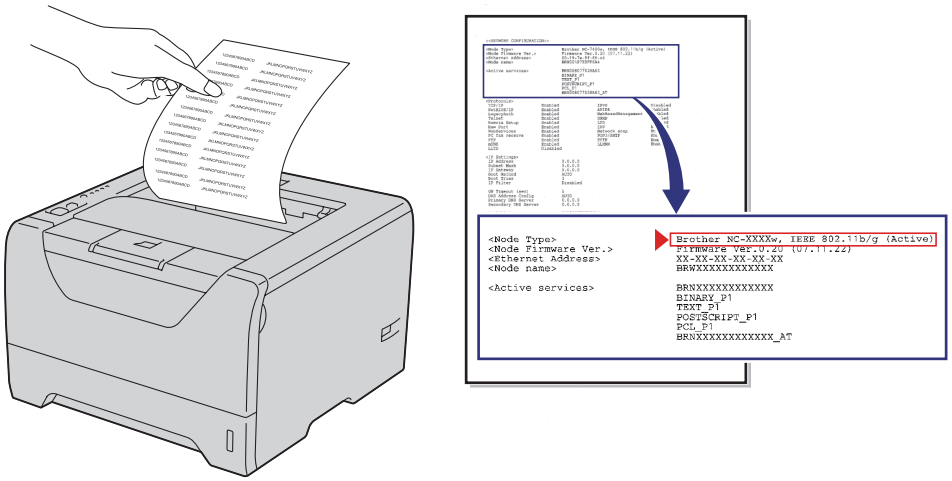


10 Read the **Important Notice** to enable the wireless interface. Hold down the **Go** button for 10 seconds, and then release the **Go** button when the printer prints a Network Configuration page. Check the box after you confirm the wireless setting is enabled, and then click **Next**.

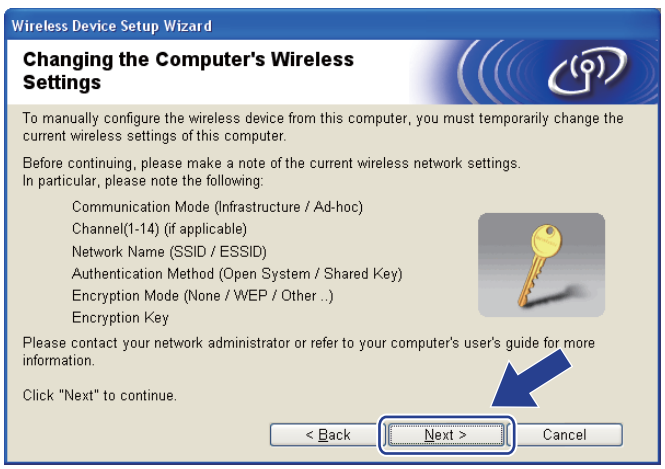


Note

To confirm the wireless setting is enabled, check the text to the right of **IEEE 802.11b/g** in the **Node Type** section on the Network Configuration page. **Active** means that the wireless setting is enabled and **Inactive** means that the wireless setting is disabled. If the wireless setting is disabled, press the **Go** button for 10 seconds again.



11 You need to temporarily change your computer's wireless settings. Follow the on-screen instructions. Make sure you take notes on all the settings such as SSID, channel, authentication and encryption of your computer. (See your note on page 46.) You will need them to return your computer back to its original wireless settings, and then click **Next**.



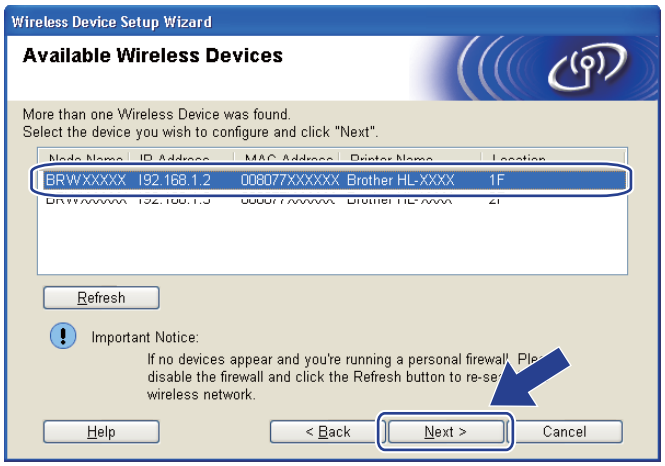
⓬ To communicate with the un-configured wireless machine, temporarily change the wireless settings on your computer to match the machine's default settings shown on this screen. Check the box after you confirm these settings, and then click **Next**.



Note

- If a message to restart your computer appears after the wireless settings have been changed, restart your computer and then go back to step ❹ and continue with the install skipping steps ⓫ and ⓬.
- For Windows Vista® users:
  You can temporarily change the wireless settings on your computer, following the steps below:
  1) Click the button and then **Control Panel**.
  2) Click **Network and Internet** and then the **Network and Sharing Center** icon.
  3) Click **Connect to a network**.
  4) You can see the SSID of the wireless printer in the list. Choose **SETUP** and click **Connect**.
  5) Click **Connect Anyway** and then **Close**.
  6) Click **View status** of **Wireless Network Connection (SETUP)**.
  7) Click **Details...**. and check the **Network Connection Details**. It may take a few minutes to change from 0.0.0.0 to 169.254.x.x IP address to be shown on screen (where x.x. are numbers between 1 and 254).
- For Windows® XP SP2 users:
  You can temporarily change the wireless settings on your computer, following the steps below:
  1) Click the **Start** button and then **Control Panel**.
  2) Click the **Network and Internet Connections** icon.
  3) Click the **Network Connections** icon.
  4) Choose and right-click **Wireless Network Connection**. Click **View Available Wireless Networks**.
  5) You can see the SSID of the wireless printer in the list. Choose **SETUP** and click **Connect**.
  6) Check the **Wireless Network Connection** status. It may take a few minutes to change from 0.0.0.0 to 169.254.x.x IP address to be shown on screen (where x.x. are numbers between 1 and 254).

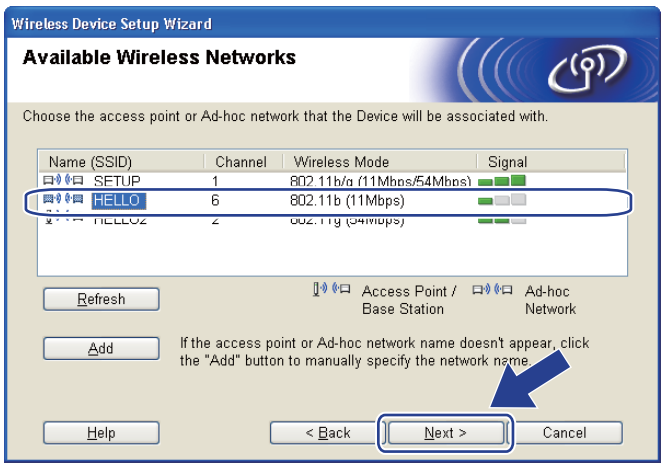
⓭ Choose the machine you wish to configure, and click **Next**. If the list is blank, check if the machine is powered on, and then click **Refresh**.



Note

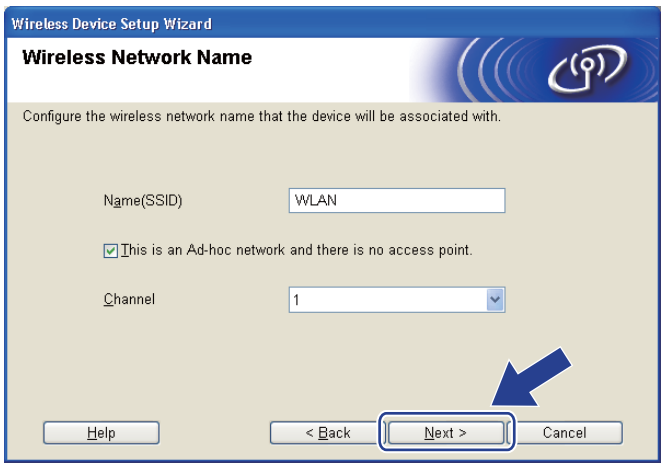
- The default node name is “BRWxxxxxxxxxxxx”.
- You can find your printer’s MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

⓮ The wizard will search for wireless networks available from your machine. Choose the Ad-hoc network you wish to associate the machine with, and then click **Next**.



Note

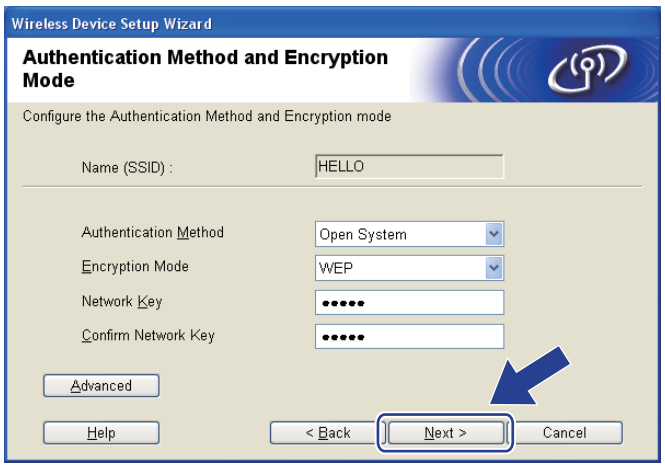
- If the list is blank, check if the machine is within range for wireless communication. Then, click **Refresh**.
- If your target Ad-hoc network does not appear on the list, you can manually add it by clicking the **Add** button. Check **This is an Ad-hoc network and there is no access point.**, and then enter the **Name (SSID)** and the **Channel** number, and then click **Next**.



15 If your network is not configured for Authentication and Encryption, the following screen will appear. To continue configuration, click **OK** and go to ⓱.



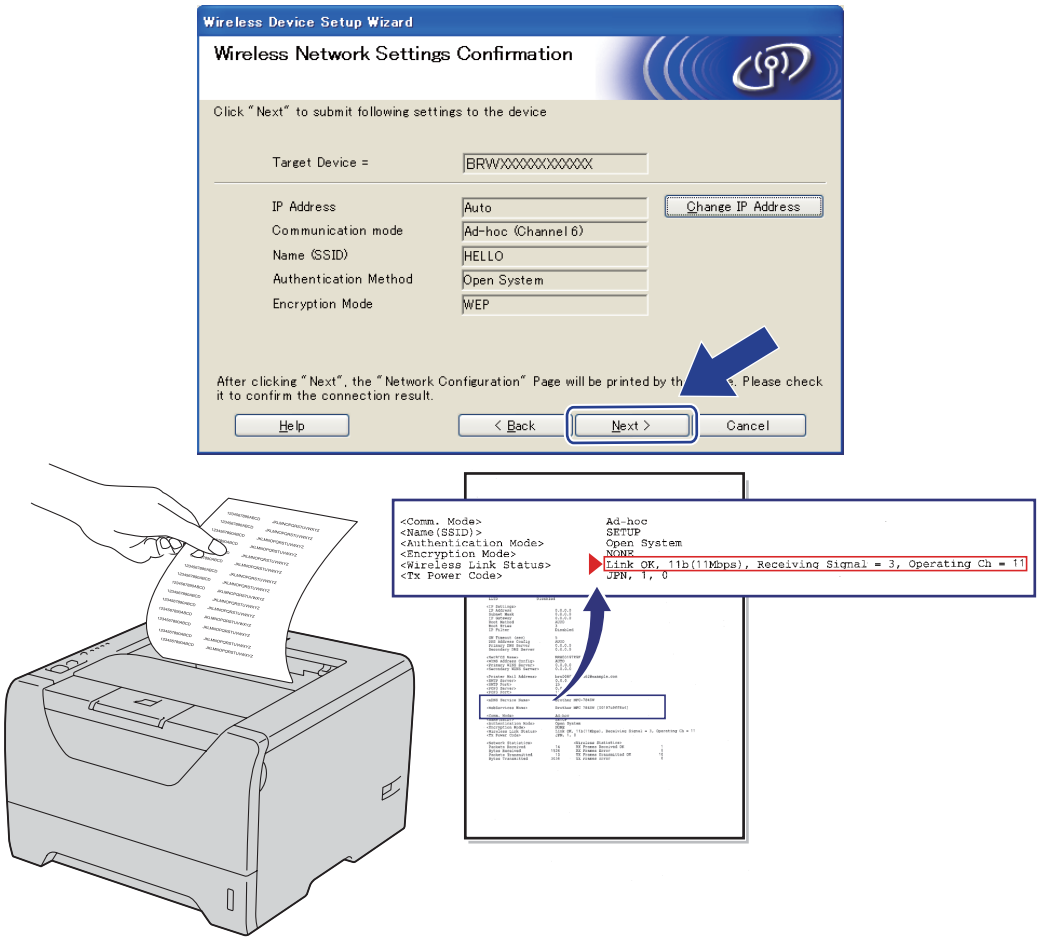
16 If your network is configured for Authentication and Encryption, the following screen will appear. **When configuring your Brother wireless machine, you must ensure that it is configured to match the Authentication and Encryption settings you wrote down on page 46 for your existing wireless network.** Choose the **Authentication Method** and **Encryption Mode** from the pull-down list in each setting box. Then enter the **Network Key** and **Confirm Network Key**, and then click **Next**.



Note

- If you want to setup or configure additional WEP key indexes other than WEP key1, click **Advanced**.
- If you do not know the Authentication or Encryption settings for your network, contact your network administrator.
- If you are using WEP and the printed Network Configuration page in 17 shows **Link OK** in the **Wireless Link Status**, but the machine is not found on your network, make sure you entered the WEP key correctly. The WEP key is case sensitive.

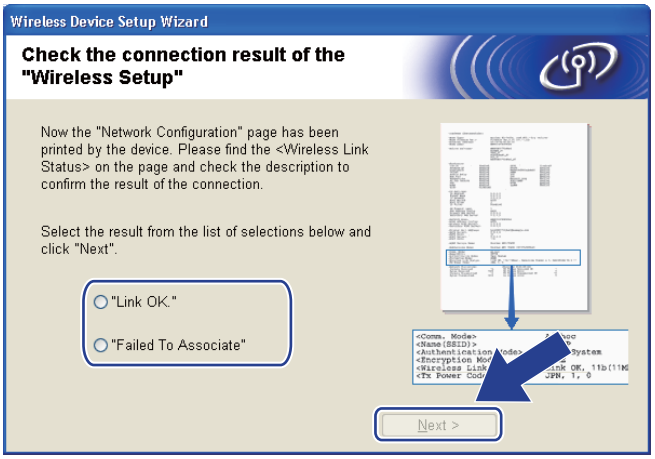
17 Click **Next**. The settings will be sent to your machine. The settings will remain unchanged if you click **Cancel**. The Network Configuration page will be printed.



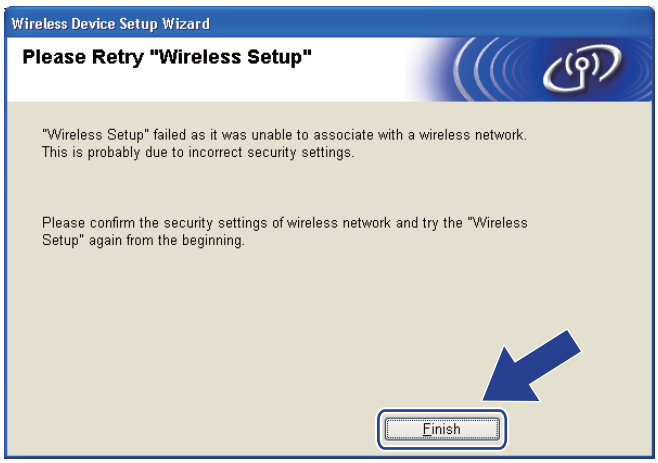
Note

If you want to manually enter the IP address settings of your machine, click **Change IP Address** and enter the necessary IP address settings for your network.

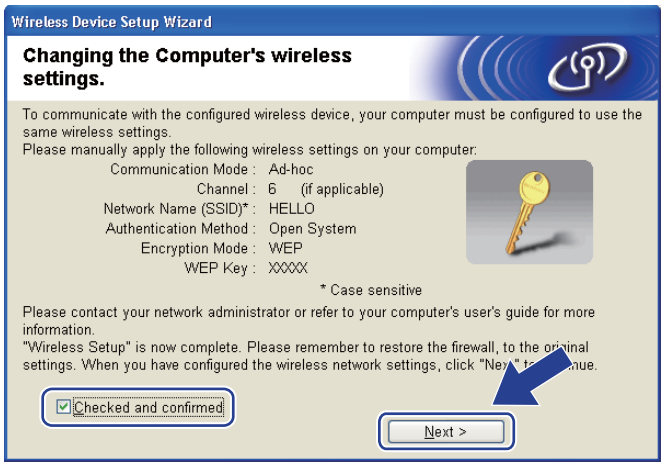
⓲ Check the printed Network Configuration page. Choose the status as it is shown for the **Wireless Link Status** on the Network Configuration page. Click **Next**.
If your status is **"Link OK."**, go to ⓴.
If your status is **"Failed To Associate"**, go to ⓳.



⓳ Click **Finish**. Wireless setup was unable to associate with a wireless network. This is probably due to incorrect security settings. Confirm the security settings of your wireless network and try starting from ❻ again.



20 To communicate with the configured wireless device, you must configure your computer to use the same wireless settings. Manually change the wireless settings on your computer to match the machine's wireless settings shown on this screen. Check the box after you confirm these settings, and then click **Next** or **Finish**.
(The settings shown on this screen are for example only. Your settings will not be the same.)



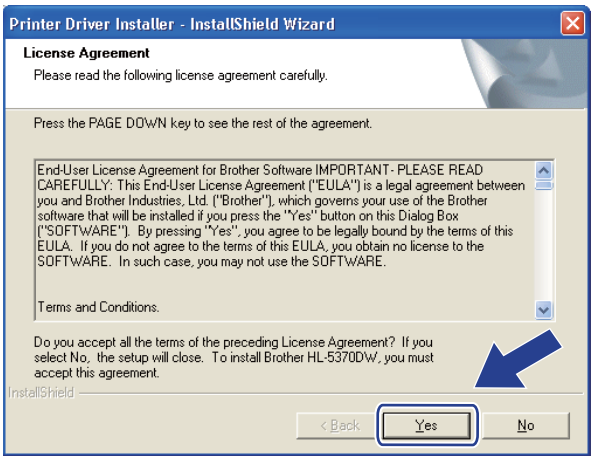
OK! **You have completed the wireless setup. If you chose to install the printer driver in step ❼, Go to *Installing the printer driver* on page 58.**

Installing the printer driver

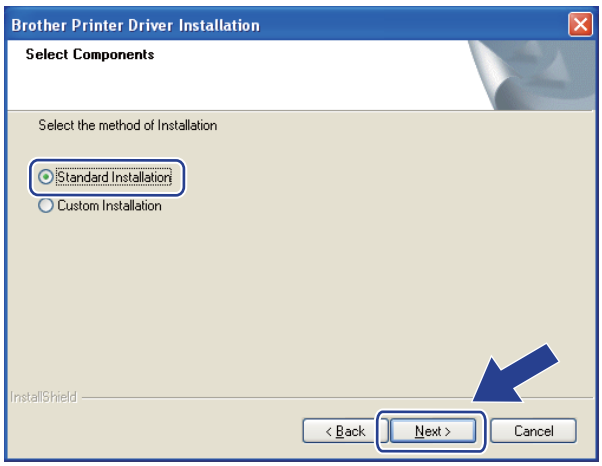
IMPORTANT

- DO NOT try to cancel any of the screens during this installation.
- If your wireless settings fail, an error message will appear during the installation of the printer driver and the installation will be terminated. If you encounter this failure, please go back to step 1 and setup the wireless connection again.

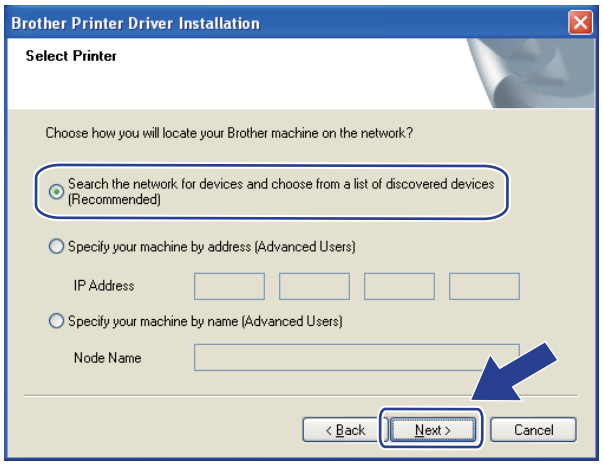
1. The driver installation starts. When the **License Agreement** window appears, click **Yes** if you agree to the License Agreement.



2. Choose **Standard Installation**, and then click **Next**.



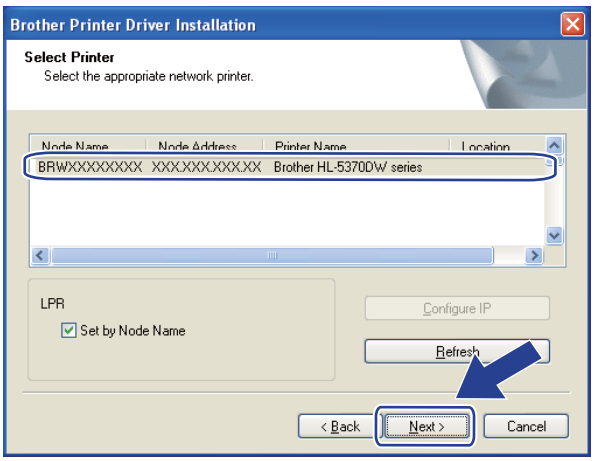
3 Choose **Search the network for devices and choose from a list of discovered devices (Recommended)**. Or enter your printer's IP address or its node name. Click **Next**.



Note

You can find your printer's IP address and the node name by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

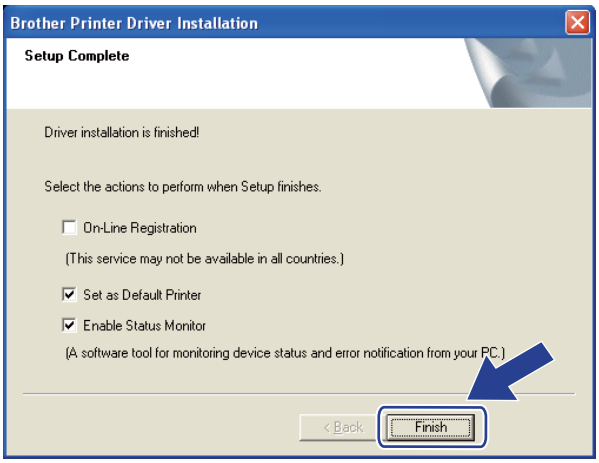
4 Choose your printer, and then click **Next**.



Note

If your printer takes a long time to appear on the list, 1 minute or more, then click **Refresh**. If your printer still fails to appear, reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118) and try the wireless setup again.

5 Click **Finish**.



Note

- If you want to register your product on-line, check **On-Line Registration**.
- If you do not want to set your printer as Default printer, uncheck **Set as Default Printer**.
- If you want to disable the Status Monitor, uncheck **Enable Status Monitor**.
- If you disable your Personal Firewall software (e.g. Windows® Firewall), turn it back on.

OK! **Setup is now complete.**

5 Wireless Configuration for Macintosh using the Brother installer application (For HL-5370DW)

Configuration in Infrastructure mode

Before configuring the wireless settings

IMPORTANT

The following instructions will install your Brother machine in a network environment using the Brother installer application for Macintosh found on the CD-ROM we have provided with the machine.

You must know your wireless network settings before you proceed with this installation. Make sure you take notes on all the current settings such as the SSID, authentication and encryption of your wireless network environment. If you do not know them, contact your network administrator or the manufacturer of your access point/router.

Item	Example	Record the current wireless network settings
Communication mode: (Infrastructure)	Infrastructure	
Network name: (SSID, ESSID)	HELLO	
Authentication method: (Open System, Shared key, WPA-PSK [1], WPA2-PSK [1], LEAP, EAP-FAST)	WPA2-PSK	
Encryption mode: (None, WEP, TKIP, AES, CKIP)	AES	
Network key: (Encryption key, WEP key [2], Passphrase)	12345678	

[1] WPA/WPA2-PSK is a Wi-Fi Protected Access Pre-Shared Key, which lets the Brother wireless machine associate with access points using TKIP or AES encryption (WPA-Personal). WPA-PSK(TKIP or AES) and WPA2-PSK(AES) use a Pre-Shared Key (PSK) that is 8 or more characters in length, up to a maximum of 63 characters.

[2] The WEP key is for 64-bit encrypted networks or 128-bit encrypted networks and can contain both numbers and letters. If you do not know this information you should see the documentation provided with your access point or wireless router. This key is a 64-bit or 128-bit value that must be entered in an ASCII or HEXADECIMAL format.

For example:

64-bit ASCII: Uses 5 text characters e.g. “Hello” (this is case sensitive)
64-bit Hexadecimal: Uses 10 digits of hexadecimal data e.g. “71f2234aba”
128-bit ASCII: Uses 13 text characters e.g. “Wirelesscomms” (this is case sensitive)
128-bit Hexadecimal: Uses 26 digits of hexadecimal data e.g. “71f2234ab56cd709e5412aa3ba”

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118).

If you are using a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

You need to temporarily use an Ethernet cable during configuration.

Configure the wireless settings

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Turn on your Macintosh.
4. Put the supplied CD-ROM into your CD-ROM drive. Double-click the **HL5300** icon on your desktop. Double-click the **Start Here** icon. Choose your printer model and the language.
5. Click **Install Printer Driver** on the menu screen.



6. Click **Wireless Network users**.



7 Choose **Wireless Setup and Driver Install (Recommended)** or **Wireless Setup Only**, and then click **Next**.



8 Choose **Step by Step install (Recommended)** and then click **Next**.



9 Choose **With cable (Recommended)** and then click **Next**.



⑩ Connect the Brother wireless device to your access point using a network cable and click **Next**.



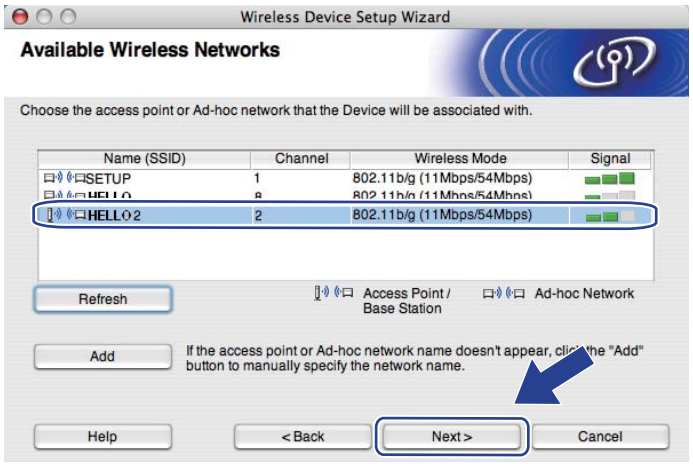
⑪ Choose the machine you wish to configure, and click **Next**. If the list is blank, check if the access point and the machine are powered on, and then click **Refresh**.



Note

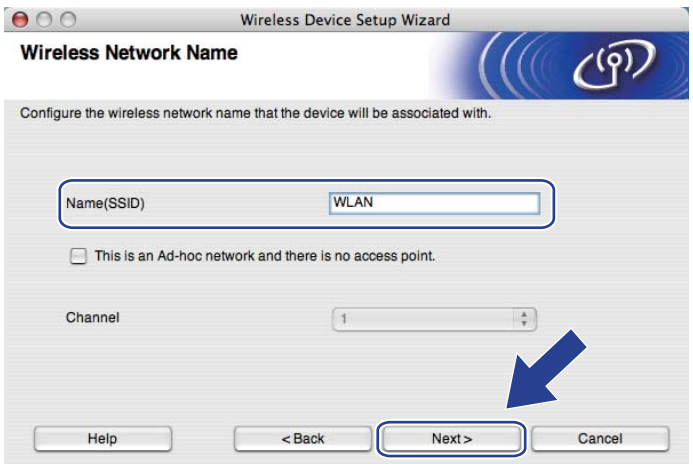
- The default node name is “BRNxxxxxxxxxxx”.
- You can find your printer’s MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

⑫ The wizard will search for wireless networks available from your machine. Choose the access point you wish to associate the machine with, and then click **Next**.



Note

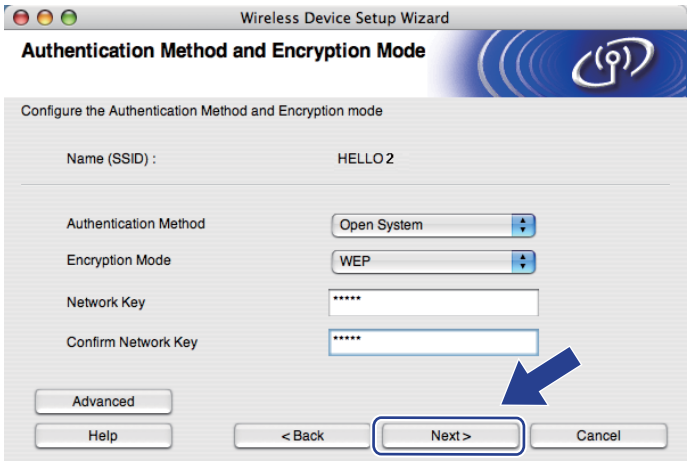
- "**SETUP**" is the default SSID of the machine. Do not choose this SSID.
- If the list is blank, check that the access point has power and is broadcasting the SSID, and then see if the machine and the access point are within range for wireless communication. Then, click **Refresh**.
- If your access point is set to not broadcast the SSID you can manually add it by clicking the **Add** button. Follow the on-screen instructions for entering the **Name (SSID)** and then click **Next**.



⓭ If your network is not configured for Authentication and Encryption, the following screen will appear. To continue configuration, click **OK** and go to ⓯.



⓮ If your network is configured for Authentication and Encryption, the following screen will appear. **When configuring your Brother wireless machine, you must configure your machine to match the Authentication and Encryption settings you wrote down on page 61 for your existing wireless network.** Choose the **Authentication Method** and **Encryption Mode** from the pop-up menu in each setting box. Then enter the **Network Key** and **Confirm Network Key**, and then click **Next**.

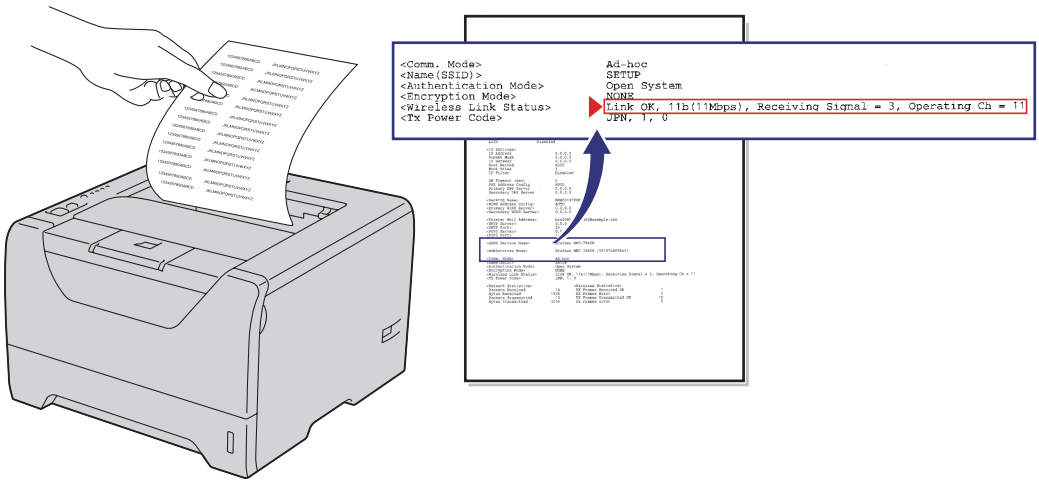


Note

- If you want to setup or configure additional WEP key indexes other than WEP key1, click **Advanced**.
- If you do not know the Authentication or Encryption settings for your network, contact your network administrator or the manufacturer of your access point/router.
- If you are using WEP and the printed Network Configuration page in ⓯ shows **Link OK** in the **Wireless Link Status**, but the machine is not found on your network, make sure you entered the WEP key correctly. The WEP key is case sensitive.

15 Click **Next**. The settings will be sent to your machine. The settings will remain unchanged if you click **Cancel**. The Network Configuration page will be printed.

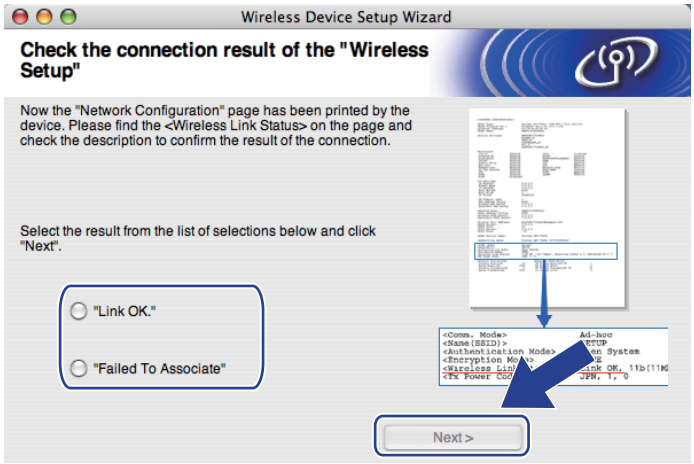




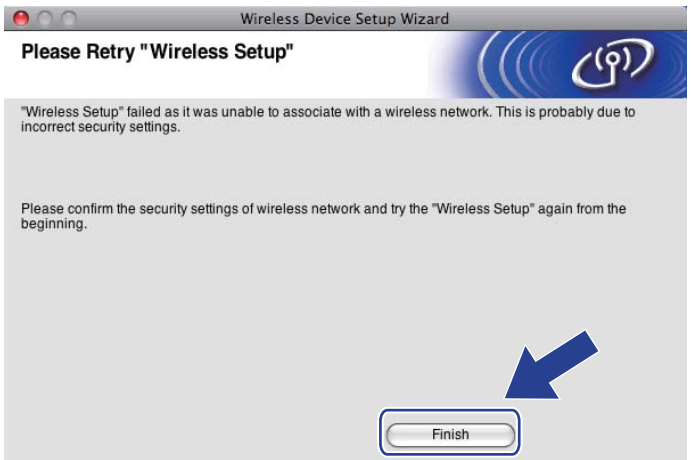
Note

- If you want to manually enter the IP address settings of your machine, click **Change IP Address** and enter the necessary IP address settings for your network.
- The wireless network setting will be automatically changed to enabled when the wireless settings are sent to your machine.

⓰ Check the printed Network Configuration page. Choose the status as it is shown for the **Wireless Link Status** on the Network Configuration page. Click **Next**.
If your status is **"Link OK."**, go to ⓲.
If your status is **"Failed To Associate"**, go to ⓱.



⓱ Click **Finish**. Wireless setup was unable to associate with a wireless network. This is probably due to incorrect security settings. Reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118). Confirm the security settings of your wireless network and try starting from ❻ again.



18 Disconnect the network cable between your access point (hub or router) and the machine, and click **Next** or **Finish**.



You have completed the wireless setup. If you chose to install the printer driver in step ❼, Go to *Installing the printer driver* on page 88.

Configuration using the automatic wireless (one-push) method

If your wireless access point/router supports either SecureEasySetup™, Wi-Fi Protected Setup (PBC [1]) or AOSS™, you can configure the machine easily without knowing your wireless network settings. Your Brother machine has one-push wireless setting mode. This feature automatically detects which mode your access point uses for one-push configuration (SecureEasySetup™, Wi-Fi Protected Setup or AOSS™). By pushing a button on the wireless access point/router and the machine, you can setup the wireless network and security settings. See the user's guide for your wireless access point/router for instructions on how to access one-push mode.

[1] Push Button Configuration

Note

Routers or access points that support SecureEasySetup™, Wi-Fi Protected Setup or AOSS™ have the symbols shown below.







Before configuring the wireless settings

IMPORTANT

The following instructions will install your Brother machine in a network environment using the Brother installer application for Macintosh found on the CD-ROM we have provided with the machine.

If you are going to connect your Brother machine to your network, we recommend that you contact your system administrator prior to installation.

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings. (see *Reset the network settings to the factory default* on page 118).

If you are using a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

Configure the wireless settings

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Turn on your Macintosh.
4. Put the supplied CD-ROM into your CD-ROM drive. Double-click the **HL5300** icon on your desktop. Double-click the **Start Here** icon. Choose your printer model and the language.
5. Click **Install Printer Driver** on the menu screen.



6. Click **Wireless Network users**.



7 Choose **Wireless Setup and Driver Install (Recommended)** or **Wireless Setup Only**, and then click **Next**.



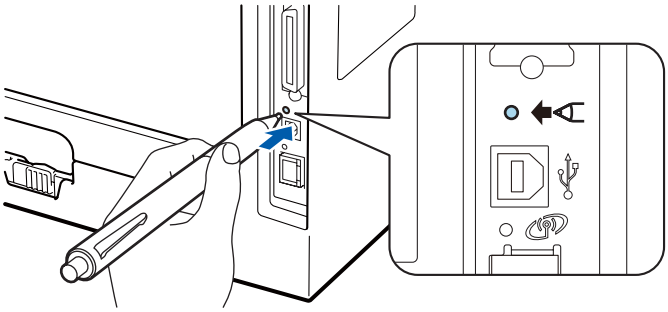
8 Choose **Automatic install (Advanced)** and click **Next**.



9 Confirm the on-screen message and click **Next**.



⑩ Press the wireless setup button located at the back of the machine for less than 2 seconds as shown in the illustration below. This will put the machine in one-push wireless setting mode. This feature will automatically detect which mode your access point uses for one-push configuration (SecureEasySetup™, Wi-Fi Protected Setup or AOSS™).



Note

- Make sure that the label covering the USB interface connector is removed.
- Use a pointy object such as a ballpoint pen to press the button.
- If you press the button for 3 seconds or more, the machine will change to the PIN Method of the Wi-Fi Protected Setup mode. See *How to configure your wireless machine, using the PIN Method of Wi-Fi Protected Setup* on page 100.

⑪ The machine starts the one-push wireless setting mode.
The machine will search for an access point that supports SecureEasySetup™, Wi-Fi Protected Setup or AOSS™ for 2 minutes.

⑫ Put your access point in the SecureEasySetup™ mode, Wi-Fi Protected Setup mode or AOSS™ mode, depending on what is supported by your access point. Please refer to the instruction manual that came with your access point.

⓭ Wait until the **Status** LED of your machine indicates `Connected`. The **Status** LED will turn on for 5 minutes. (See the table below) This indication means the machine has successfully connected to your access point/router. You can now use your machine in a wireless network.

If the LED indicates `Connection Fail` (See the table below), the machine has not successfully connected to your access point/router. Try starting from ⓾ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `No Access Point` (See the table below), the machine has detected no access point/router on your network. Make sure you place the Brother machine as close to the network access point/router as possible with minimal obstructions, and try starting from ⓾ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `Connection Error` (See the table below), the machine has detected more than 2 access points/routers on your network that have the SecureEasySetup™, the Wi-Fi Protected Setup mode or the AOSS™ mode enabled. Make sure that only one access point/router has the SecureEasySetup™ mode, Wi-Fi Protected Setup mode or the AOSS™ mode enabled and try starting from ⓾ again.

LED indications when using the one-push wireless setting mode

LEDs	Setting WLAN [1]	Connecting SES/WPS/ AOSS [1]	Connected [2]	Connection Fail [3]	No Access Point [3]	Connection Error [4]		
Back Cover	☐	☐	☐	☐	☐	☐		☐
Toner (Yellow)	☀	☀	☐	☐	☐	☐		☐
Drum (Yellow)	☐	☀	☐	☐	☐	☐	↔	☐
Paper (Yellow)	☐	☐	☐	☐	☀	☐		☐
Status (Red / Green)	☐	☐	■	☀	☀	☀		☐

1 The LED will blink (turn on for 0.2 seconds and off for 0.1 second).

2 The LED will turn on for 5 minutes.

3 The LED will blink (turn on for 0.1 second and off for 0.1 second) for 30 seconds.

4 The LED will flash 10 times and then turn OFF for half a second. This pattern will repeat 20 times.

⓮ Click **Next** or **Finish**.



OK! **You have completed the wireless setup. If you chose to install the printer driver in step ❼, Go to the next step.**

⓯ Check the box after you confirm that you have completed the wireless settings, and then click **Next**. Go to *Installing the printer driver* on page 88.



Configuration in Ad-hoc mode

Before configuring the wireless settings

IMPORTANT

The following instructions will install your Brother machine in a network environment using the Brother installer application for Macintosh found on the CD-ROM we have provided with the machine.

You must know your wireless network settings before you proceed with this installation. Make sure you take notes on all the current settings such as the SSID, authentication and encryption of your wireless network environment. If you do not know them, contact your network administrator.

Item	Example	Record the current wireless network settings
Communication mode: (Ad-hoc)	Ad-hoc	
Network name: (SSID, ESSID)	HELLO	
Authentication method: (Open System)	Open System	
Encryption mode: (None, WEP)	WEP	
Network key: (Encryption key, WEP key [1], Passphrase)	12345	

[1] The WEP key is for 64-bit encrypted networks or 128-bit encrypted networks and can contain both numbers and letters. If you do not know this information you should see the documentation provided with your access point or wireless router. This key is a 64-bit or 128-bit value that must be entered in an ASCII or HEXADECIMAL format.

For example:

64-bit ASCII: Uses 5 text characters e.g. “Hello” (this is case sensitive)
64-bit Hexadecimal: Uses 10 digits of hexadecimal data e.g. “71f2234aba”
128-bit ASCII: Uses 13 text characters e.g. “Wirelesscomms” (this is case sensitive)
128-bit Hexadecimal: Uses 26 digits of hexadecimal data e.g. “71f2234ab56cd709e5412aa3ba”

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings. (see *Reset the network settings to the factory default* on page 118).

If you are using a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

Configure the wireless settings

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Turn on your Macintosh.
4. Put the supplied CD-ROM into your CD-ROM drive. Double-click the **HL5300** icon on your desktop. Double-click the **Start Here** icon. Choose your printer model and the language.
5. Click **Install Printer Driver** on the menu screen.



6. Click **Wireless Network users**.



7 Choose **Wireless Setup and Driver Install (Recommended)** or **Wireless Setup Only**, and then click **Next**.



8 Choose **Step by Step install (Recommended)** and then click **Next**.



9 Choose **Without cable (Advanced)** and then click **Next**.

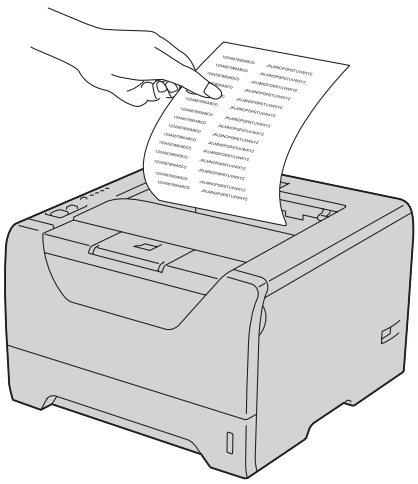


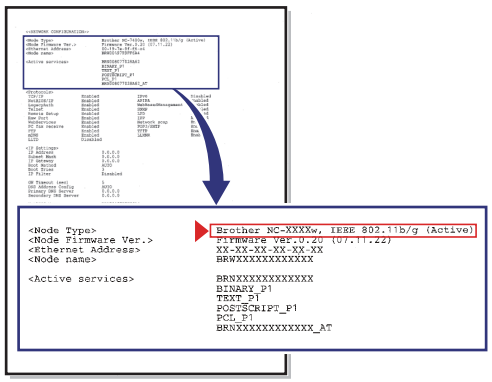
⑩ Read the **Important Notice** to enable the wireless interface. Hold down the **Go** button for 10 seconds, and then release the **Go** button when the printer prints a Network Configuration page. Check the box after you confirm the wireless setting is enabled, and then click **Next**.



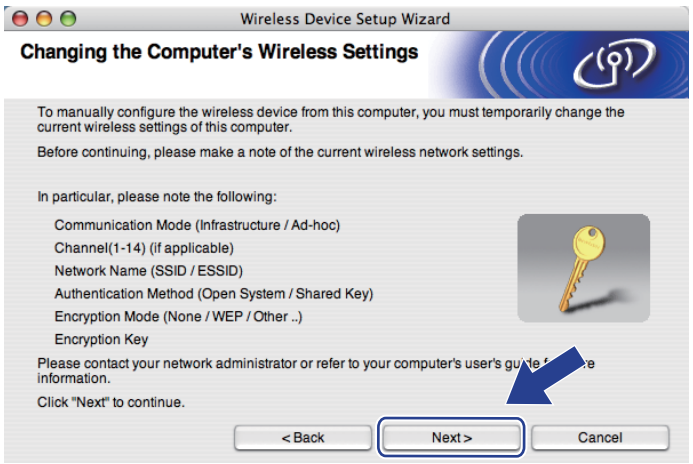
Note

To confirm the wireless setting is enabled, check the text to the right side of **IEEE 802.11b/g** in the **Node Type** section on the Network Configuration page. **Active** means that the wireless setting is enabled and **Inactive** means that the wireless setting is disabled. If the wireless setting is disabled, press the **Go** button for 10 seconds again.





⓫ You need to temporarily change your computer's wireless settings. Follow the on-screen instructions. Make sure you take notes on all the settings such as the SSID, channel, authentication and encryption of your computer. (See your note on page 77.) You will need them to return your computer back to its original wireless settings, and then click **Next**.



⓬ To communicate with the un-configured wireless machine, temporarily change the wireless settings on your computer to match the machine's default settings shown on this screen. Check the box after you confirm these settings, and then click **Next**.



Note

You can temporarily change the wireless settings on your computer, following the steps below:

1) Click the AirPort status icon and choose **Open Internet Connect...**.
2) Click the Network tab to see the available wireless devices. You can see the Brother wireless print server in the **Network** option. Choose **SETUP**.
3) Your wireless network is connected successfully.

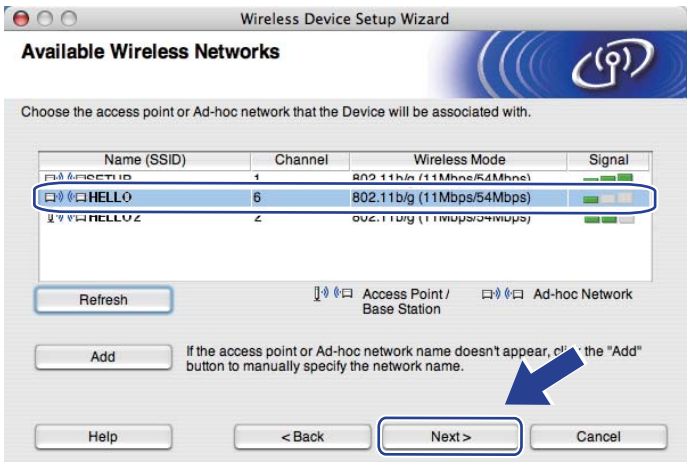
13 Choose the machine you wish to configure, and click **Next**. If the list is blank, check if the machine is powered on, and then click **Refresh**.



Note

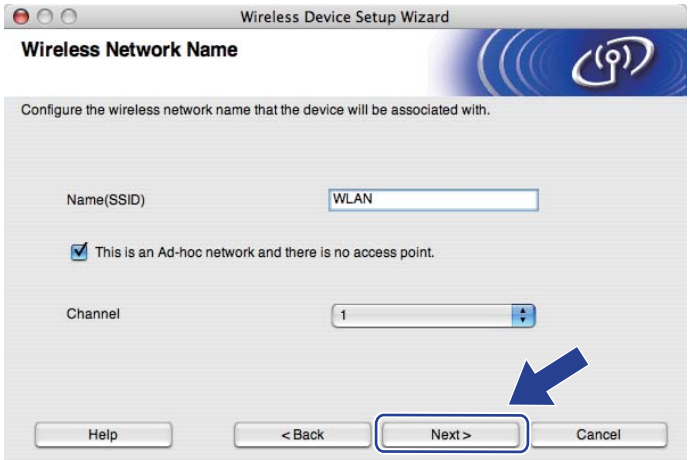
- The default node name is “BRWxxxxxxxxxxxx”.
- You can find your printer’s MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

14 The wizard will search for wireless networks available from your machine. Choose the Ad-hoc network you wish to associate the machine with, and then click **Next**.



Note

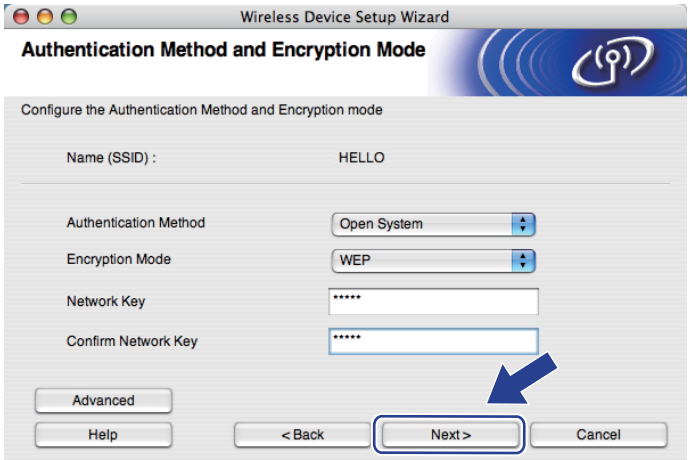
- If the list is blank, check if the machine is within range for wireless communication. Then, click **Refresh**.
- If your target Ad-hoc network does not appear on the list, you can manually add it by clicking the **Add** button. Check **This is an Ad-hoc network and there is no access point.**, and then enter the **Name (SSID)** and the **Channel** number, and then click **Next**.



15 If your network is not configured for Authentication and Encryption, the following screen will appear. To continue configuration, click **OK** and go to ⓱.



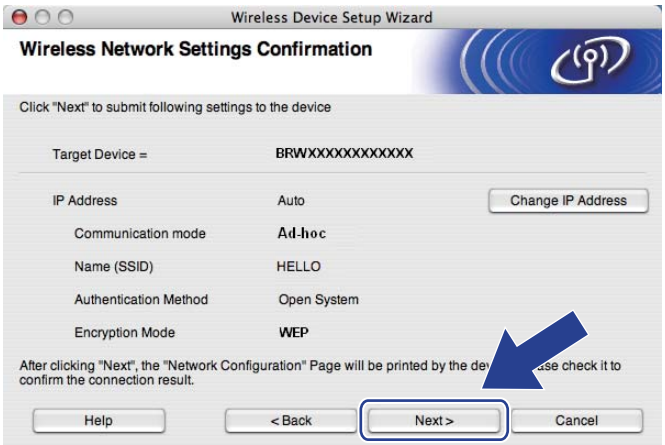
16 If your network is configured for Authentication and Encryption, the following screen will appear. **When configuring your Brother wireless machine, you must configure your machine to match the Authentication and Encryption settings you wrote down on page 77 for your existing wireless network.** Choose the **Authentication Method** and **Encryption Mode** from the pop-up menu in each setting box. Then enter the **Network Key** and **Confirm Network Key**, and then click **Next**.

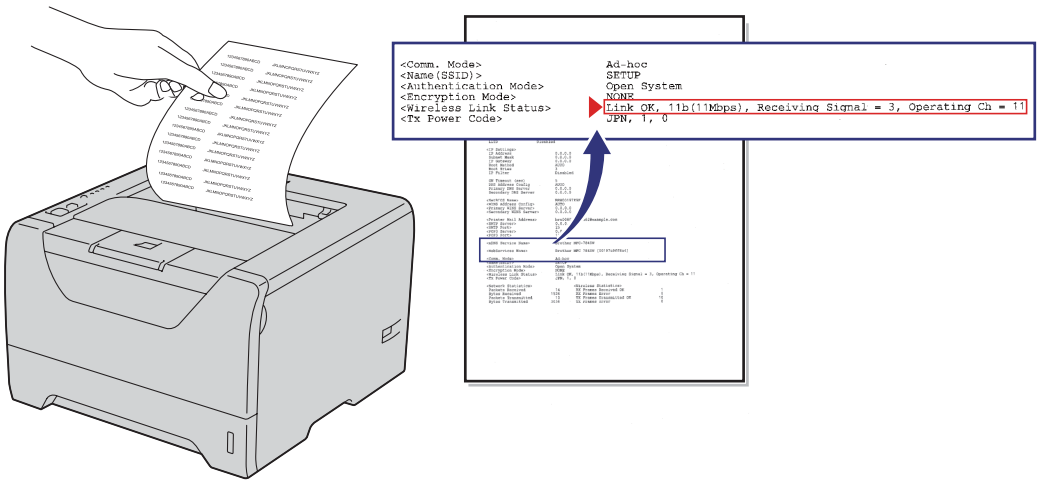


Note

- If you want to setup or configure additional WEP key indexes other than WEP key1, click **Advanced**.
- If you do not know the Authentication or Encryption settings for your network, contact your network administrator.
- If you are using WEP and the printed Network Configuration page in 17 shows **Link OK** in the **Wireless Link Status**, but the machine is not found on your network, make sure you entered the WEP key correctly. The WEP key is case sensitive.

17 Click **Next**. The settings will be sent to your machine. The settings will remain unchanged if you click **Cancel**. The Network Configuration page will be printed.

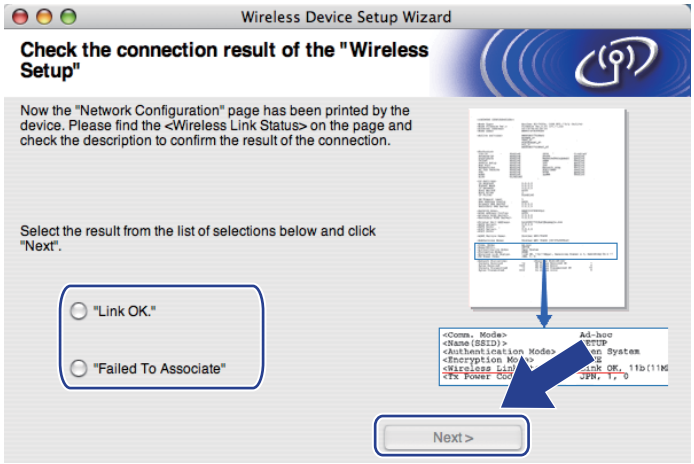




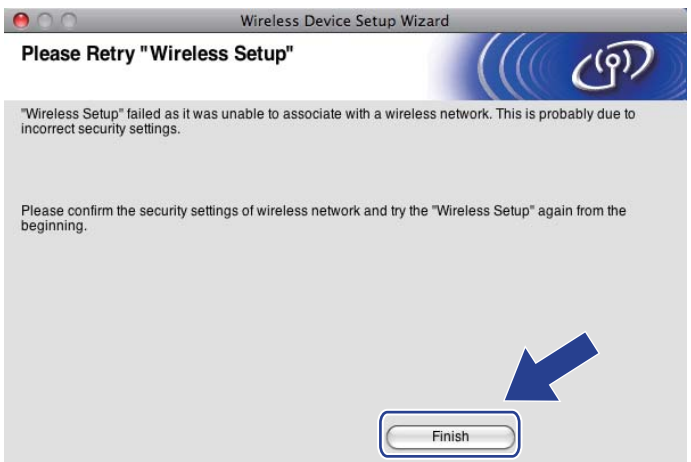
Note

If you want to manually enter the IP address settings of your machine, click **Change IP Address** and enter the necessary IP address settings for your network.

⓲ Check the printed Network Configuration page. Choose the status as it is shown for the **Wireless Link Status** on the Network Configuration page. Click **Next**.
If your status is **"Link OK."**, go to ⓴.
If your status is **"Failed To Associate"**, go to ⓳.



⓳ Click **Finish**. Wireless setup was unable to associate with a wireless network. This is probably due to incorrect security settings. Confirm the security settings of your wireless network and try starting from ❻ again.



20 To communicate with the configured wireless device, you must configure your computer to use the same wireless settings. Manually change the wireless settings on your computer to match the machine's wireless settings shown on this screen. Check the box after you confirm these settings, and then click **Next** or **Finish**.
(The settings shown on this screen are for example only. Your settings will not be the same.)



OK! **You have completed the wireless setup. If you chose to install the printer driver in step ❼, Go to *Installing the printer driver* on page 88.**

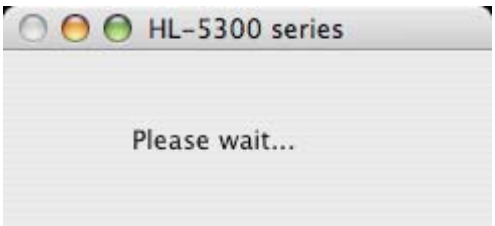
Installing the printer driver

IMPORTANT

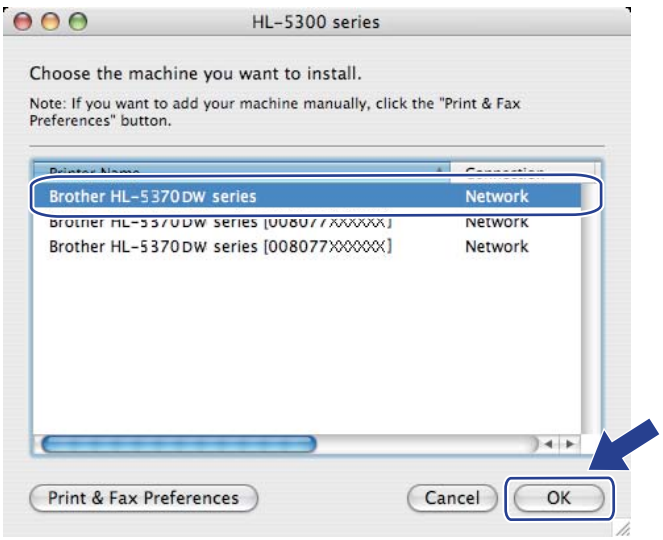
- DO NOT try to cancel any of the screens during this installation.
- If your wireless settings fail, an error message will appear during the installation of the printer driver and the installation will be terminated. If you encounter this failure, please go back to step 1 and setup the wireless connection again.

1. The driver installation starts.
   Follow the on-screen instructions. Then, restart your Macintosh.

2. The Brother software will search for the Brother printer. During this time the following screen will appear.



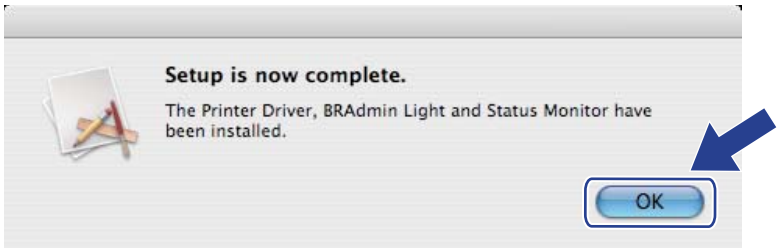
3. Choose the printer you wish to connect, and then click **OK**.



Note

- If there is more than one of the same printer model connected on your network, the MAC Address (Ethernet Address) will be displayed after the model name. You can also confirm your IP Address by scrolling to the right.
- You can find your printer's MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.
- If your printer fails to appear on the list, reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118) and try the wireless setup again.

4 When this screen appears, click **OK**.



OK! **Setup is now complete.**

6 Wireless configuration using the one-push wireless setting mode (For HL-5370DW)

Overview

If your wireless access point/router supports either SecureEasySetup™, Wi-Fi Protected Setup (PBC [1]) or AOSS™, you can configure the machine easily without knowing your wireless network settings. Your Brother machine has one-push wireless setting mode. This feature automatically detects which mode your access point uses for one-push configuration (SecureEasySetup™, Wi-Fi Protected Setup or AOSS™). By pushing a button on the wireless access point/router and the machine, you can setup the wireless network and security settings. See the user's guide for your wireless access point/router for instructions on how to access one-push mode.

[1] Push Button Configuration

Note

Routers or access points that support SecureEasySetup™, Wi-Fi Protected Setup or AOSS™ have the symbols shown below.







How to configure your wireless machine, using the one-push wireless setting mode

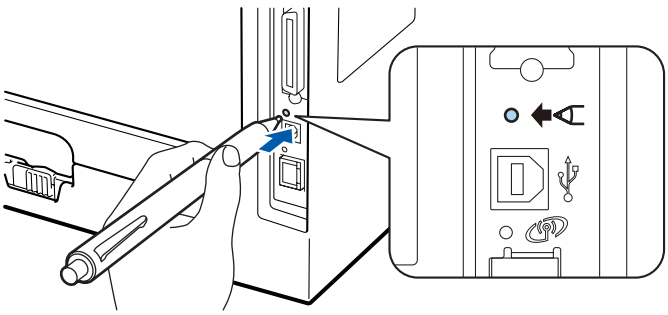
IMPORTANT

If you are going to connect your Brother machine to your network, we recommend that you contact your system administrator prior to installation.

If you are using Windows® Firewall or a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.

If you have previously configured the wireless settings of the printer, you must reset the print server back to its factory default settings (see *Reset the network settings to the factory default* on page 118).

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Press the wireless setup button located at the back of the machine for less than 2 seconds as shown in the illustration below. This will put the machine in one-push wireless setting mode. This feature will automatically detect which mode your access point uses for one-push configuration (SecureEasySetup™, Wi-Fi Protected Setup or AOSS™).



Note

- Make sure that the label covering the USB interface connector is removed.
- Use a pointy object such as a ballpoint pen to press the button.
- If you press the button for 3 seconds or more, the machine will change to the PIN Method of the Wi-Fi Protected Setup mode. See *How to configure your wireless machine, using the PIN Method of Wi-Fi Protected Setup* on page 100.

4. The machine starts the one-push wireless setting mode.
   The machine will search for an access point that supports SecureEasySetup™, Wi-Fi Protected Setup or AOSS™ for 2 minutes.
5. Put your access point in the SecureEasySetup™ mode, Wi-Fi Protected Setup mode or AOSS™ mode, depending on what is supported by your access point. Please refer to the instruction manual that came with your access point.

6 Wait until the **Status** LED of your machine indicates `Connected`. The **Status** LED will turn on for 5 minutes. (See the table below) This indication means the machine has successfully connected to your access point/router. You can now use your machine in a wireless network.

If the LED indicates `Connection Fail` (See the table below), the machine has not successfully connected to your access point/router. Try starting from ❸ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `No Access Point` (See the table below), the machine has detected no access point/router on your network. Make sure you place the Brother machine as close to the network access point/router as possible with minimal obstructions, and try starting from ❸ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `Connection Error` (See the table below), the machine has detected more than 2 access points/routers on your network that have the SecureEasySetup™, the Wi-Fi Protected Setup mode or the AOSS™ mode enabled. Make sure that only one access point/router has the SecureEasySetup™ mode, Wi-Fi Protected Setup mode or the AOSS™ mode enabled and try starting from ❸ again.

LED indications when using the one-push wireless setting mode

LEDs	Setting WLAN [1]	Connecting SES/WPS/ AOSS [1]	Connected [2]	Connection Fail [3]	No Access Point [3]	Connection Error [4]		
Back Cover	☐	☐	☐	☐	☐	☐		☐
Toner (Yellow)	☀	☀	☐	☐	☐	☐		☐
Drum (Yellow)	☐	☀	☐	☐	☐	☐	↔	☐
Paper (Yellow)	☐	☐	☐	☐	☀	☐		☐
Status (Red / Green)	☐	☐	■	☀	☀	☀		☐

1 The LED will blink (turn on for 0.2 seconds and off for 0.1 second).

2 The LED will turn on for 5 minutes.

3 The LED will blink (turn on for 0.1 second and off for 0.1 second) for 30 seconds.

4 The LED will flash 10 times and then turn OFF for half a second. This pattern will repeat 20 times.

OK! **You have completed the wireless setup. To install the printer driver, Go to step ❶ on page 93 for Windows® or page 97 for Macintosh.**

For Windows® users

IMPORTANT

DO NOT try to cancel any of the screens during this installation.

1. Turn on your computer. (You must be logged on with Administrator rights.)
   Close any applications running before configuration.
2. Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically.
   Choose your printer model and the language.
3. Click **Install Printer Driver** on the menu screen.



Note

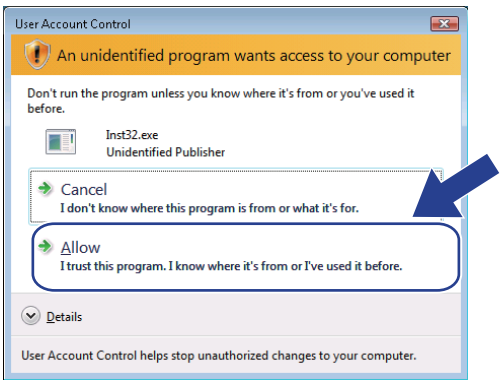
Choose the **Install Printer Driver** icon for your region.

4. Click **Wireless Network users**.

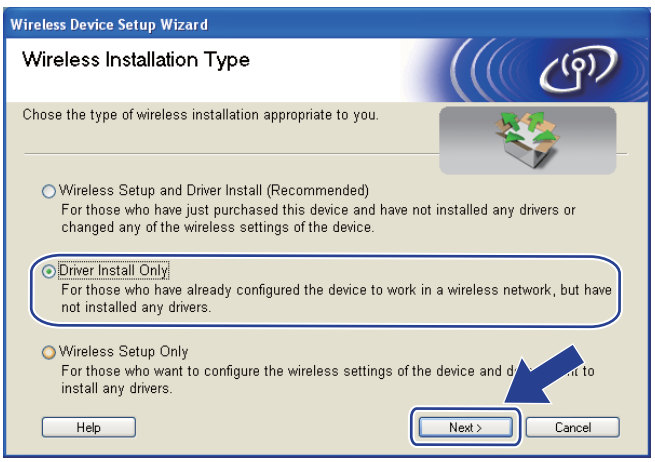


Note

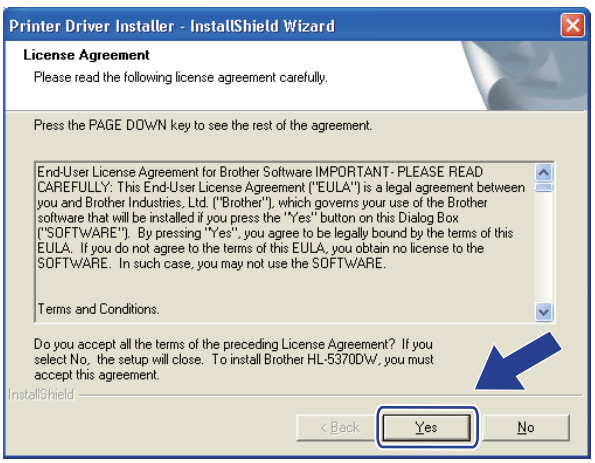
For Windows Vista®, when the **User Account Control** screen appears, click **Allow**.



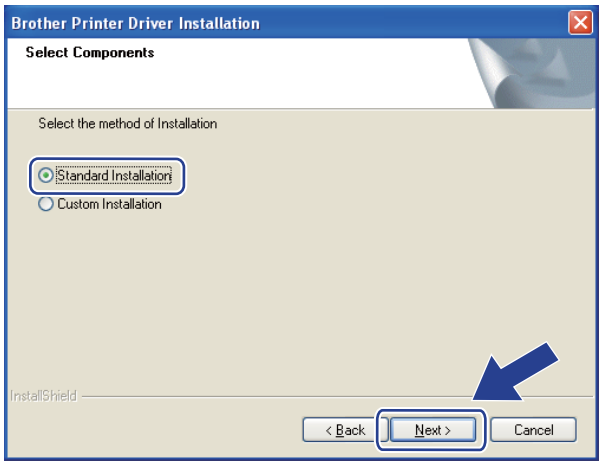
5 Choose **Driver Install Only**, and then click **Next**.



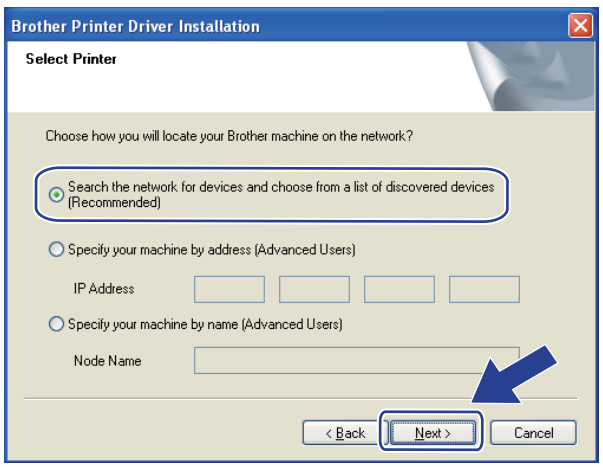
6 When the **License Agreement** window appears, click **Yes** if you agree to the License Agreement.



7 Choose **Standard Installation**, and then click **Next**.



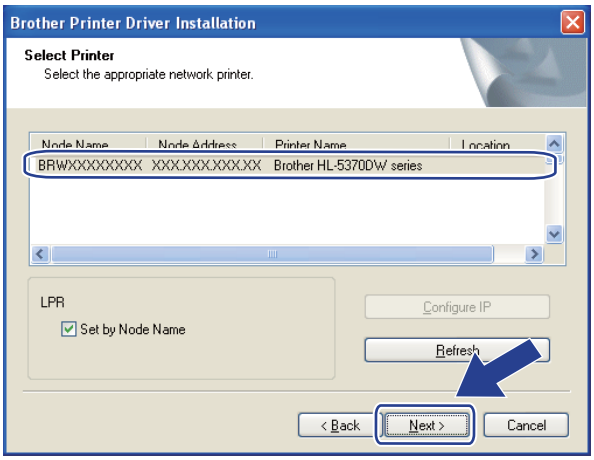
8 Choose **Search the network for devices and choose from a list of discovered devices (Recommended)**. Or enter your printer's IP address or its node name. Click **Next**.



Note

You can find your printer's IP address and the node name by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

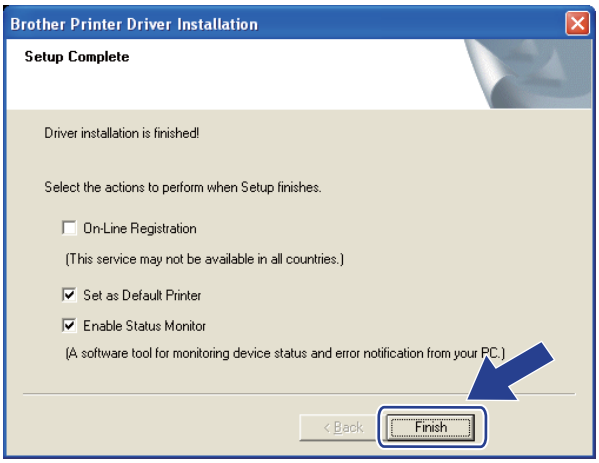
9 Choose your printer, and then click **Next**.



Note

If your printer takes a long time to appear on the list, 1 minute or more, then click **Refresh**.

10 Click **Finish**.



Note

- If you want to register your product on-line, check **On-Line Registration**.
- If you do not want to set your printer as Default printer, uncheck **Set as Default Printer**.
- If you want to disable the Status Monitor, uncheck **Enable Status Monitor**.
- If you disable the Personal Firewall software (e.g. Windows® Firewall), turn it back on.

OK! **Setup is now complete.**

For Macintosh users

IMPORTANT

DO NOT try to cancel any of the screens during this installation.

1. Turn on your Macintosh.
2. Put the supplied CD-ROM into your CD-ROM drive. Double-click the **HL5300** icon on your desktop. Double-click the **Start Here** icon. Choose your printer model and the language.
3. Click **Install Printer Driver** on the menu screen.



4. Click **Wireless Network users**.



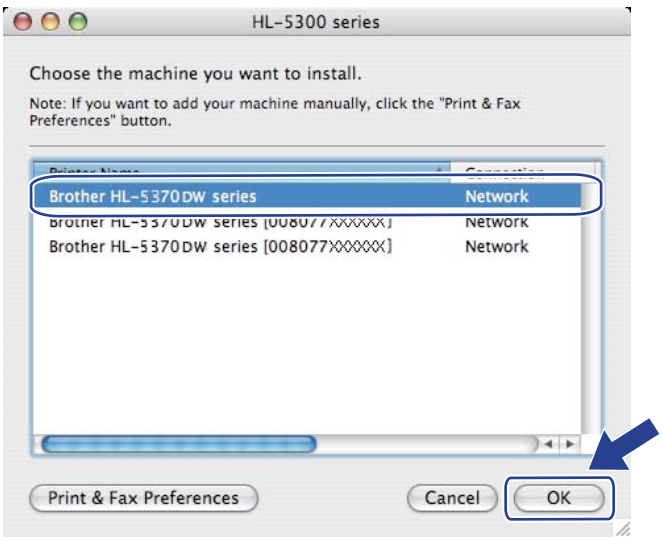
5 Choose **Driver Install Only**, and then click **Next**. Follow the on-screen instructions. Then, restart your Macintosh.



6 The Brother software will search for the Brother printer. During this time the following screen will appear.



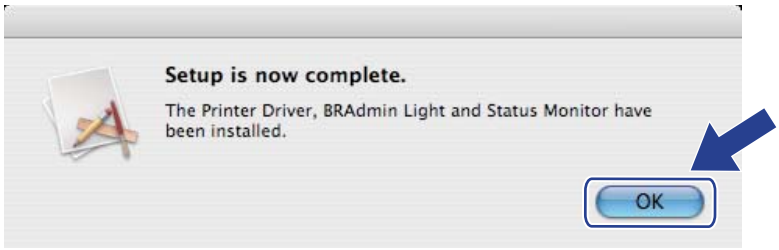
7 Choose the printer you wish to connect, and then click **OK**.



Note

- If there is more than one of the same printer model connected on your network, the MAC Address (Ethernet Address) will be displayed after the model name. You can also confirm your IP Address by scrolling to the right.
- You can find your printer's MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

8 When this screen appears, click **OK**.



OK! **Setup is now complete.**

7 Wireless configuration using the PIN Method of Wi-Fi Protected Setup (For HL-5370DW)

Overview

If your wireless access point/router supports Wi-Fi Protected Setup (PIN Method), you can configure the machine easily. The PIN (Personal Identification Number) Method is one of the connection methods developed by the Wi-Fi Alliance®. By inputting a PIN which is created by an Enrollee (your machine) to the Registrar (a device that manages the wireless LAN), you can setup the wireless network and security settings. See the user's guide for your wireless access point/router for instructions on how to access the Wi-Fi Protected Setup mode.

Note

Routers or access points that support Wi-Fi Protected Setup have a symbol as shown below.

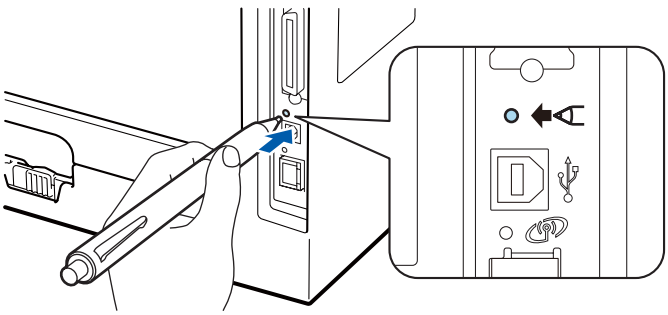


How to configure your wireless machine, using the PIN Method of Wi-Fi Protected Setup

IMPORTANT

If you are going to connect the Brother machine to your network, we recommend that you contact your system administrator prior to installation.

1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Press the wireless setup button located at the back of the machine for 3 seconds or more as shown in the illustration below.



Note

- Make sure that the label covering the USB interface connector is removed.
- Use a pointy object such as a ballpoint pen to press the button.

4 The machine will print a piece of paper that shows an 8 digit PIN and starts searching for an access point for 5 minutes.

5 Using a computer that is on the network, type `http://access_point_ip_address/` into your browser. (Where `access_point_ip_address` is the IP address of the device that is used as the Registrar [1]) Go to the WPS (Wi-Fi Protected Setup) setting page and input the PIN from the printed page to the Registrar and follow the on-screen instruction.

[1] The Registrar is normally the access point/router.

Note

The setting page is different, depending on the brand of access point/router. See the instruction manual that came with your access point/router.

If you are using your Windows Vista® computer as a Registrar, follow the instructions below.

Note

To use a Windows Vista® computer as a Registrar, you need to register it to your network in advance. See the instruction manual that came with your access point/router.

1 Click the  button and then **Network**.
2 Click **Add a wireless device**.
3 Choose your printer and click **Next**.
4 Input the PIN from the printed page and then click **Next**.
5 Choose your network that you want to connect to, and then click **Next**.
6 Click **Close**.

6 Wait until the **Status** LED of your machine indicates `Connected`. The **Status** LED will turn on for 5 minutes. (See the table below) This indication means the machine has successfully connected to your access point/router. You can now use your machine in a wireless network.

If the LED indicates `Connection Fail` (See the table below), the machine has not successfully connected to your access point/router, or the entered PIN code is invalid. Make sure you enter the correct PIN code, and try starting from ❸ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

If the LED indicates `No Access Point` (See the table below), the machine has detected no access point/router on your network. Make sure you place the Brother machine as close to the network access point/router as possible with minimal obstructions, and try starting from ❸ again. If the same message is indicated again, reset the print server back to its factory default settings and try again. For resetting, see *Reset the network settings to the factory default* on page 118.

LED indications when using the one-push wireless setting mode

LEDs	Setting WLAN [1]	Connected [2]	Connection Fail [3]	No Access Point [3]
Back Cover	☐	☐	☐	☐
Toner (Yellow)	☀	☐	☐	☐
Drum (Yellow)	☐	☐	☐	☐
Paper (Yellow)	☐	☐	☐	☀
Status (Red or Green)	☐	■	☀	☀

1 The LED will blink (turn on for 0.2 seconds and off for 0.1 second).

2 The LED will turn on for 5 minutes.

3 The LED will blink (turn on for 0.1 second and off for 0.1 second) for 30 seconds.

OK!

You have completed the wireless setup. To install the printer driver, Go to step ❶ on page 103 for Windows® or page 107 for Macintosh.

For Windows® users

IMPORTANT

DO NOT try to cancel any of the screens during this installation.

1. Turn on your computer. (You must be logged on with Administrator rights.)
   Close any applications running before configuration.
2. Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically.
   Choose your printer model and the language.
3. Click **Install Printer Driver** on the menu screen.



Note

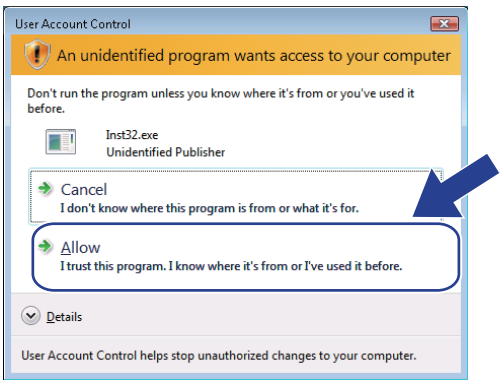
Choose the **Install Printer Driver** icon for your region.

4. Click **Wireless Network users**.

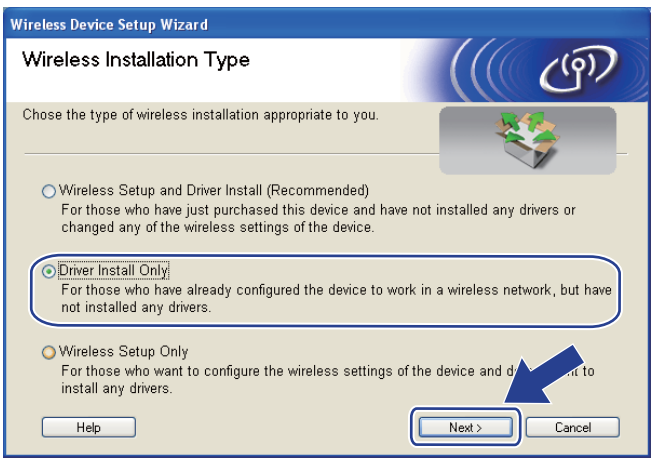


Note

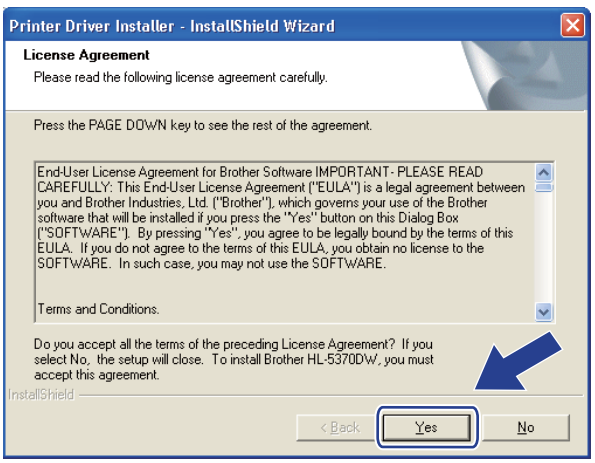
For Windows Vista®, when the **User Account Control** screen appears, click **Allow**.



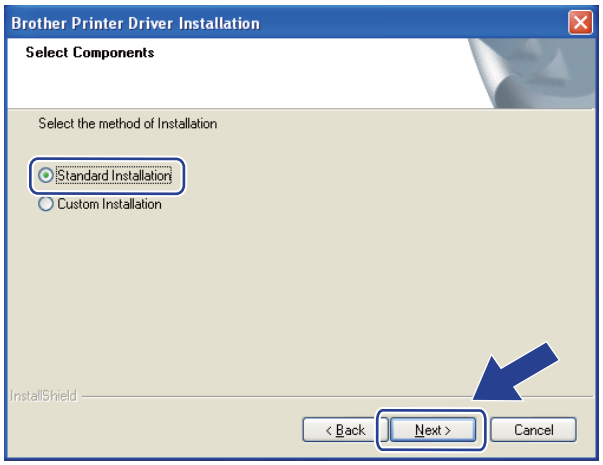
5 Choose **Driver Install Only**, and then click **Next**.



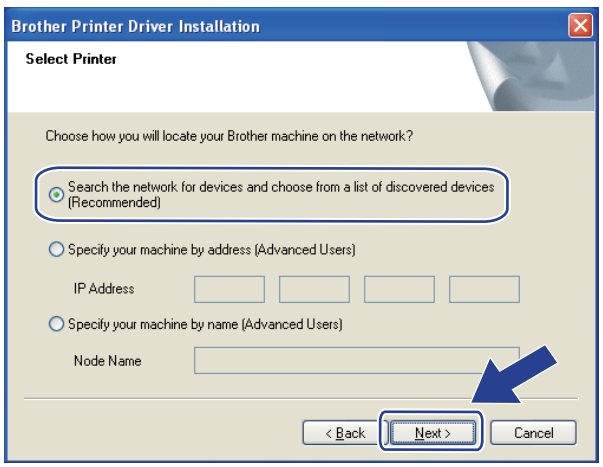
6 When the **License Agreement** window appears, click **Yes** if you agree to the License Agreement.



7 Choose **Standard Installation**, and then click **Next**.



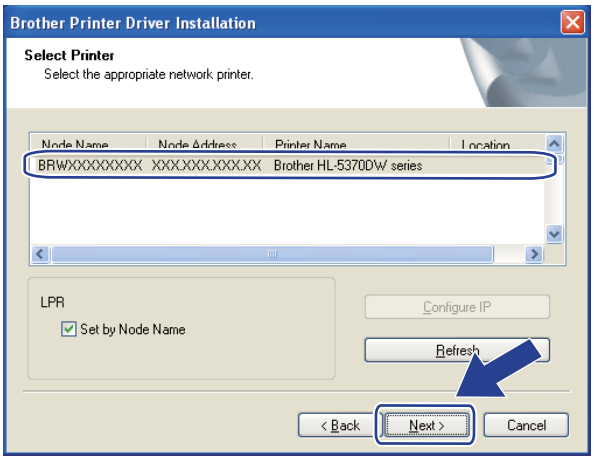
8 Choose **Search the network for devices and choose from a list of discovered devices (Recommended)**. Or enter your printer's IP address or its node name. Click **Next**.



Note

You can find your printer's IP address and the node name by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

9 Choose your printer, and then click **Next**.

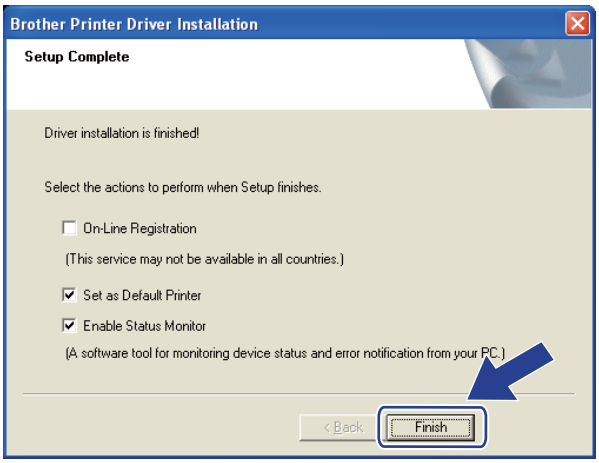


Note

If your printer takes a long time to appear on the list, 1 minute or more, then click **Refresh**.

7

10 Click **Finish**.



Note

- If you want to register your product on-line, check **On-Line Registration**.
- If you do not want to set your printer as Default printer, uncheck **Set as Default Printer**.
- If you want to disable the Status Monitor, uncheck **Enable Status Monitor**.

OK! **Setup is now complete.**

For Macintosh users

IMPORTANT

DO NOT try to cancel any of the screens during this installation.

1. Turn on your Macintosh.
2. Put the supplied CD-ROM into your CD-ROM drive. Double-click the **HL5300** icon on your desktop. Double-click the **Start Here** icon. Choose your printer model and the language.
3. Click **Install Printer Driver** on the menu screen.



4. Click **Wireless Network users**.



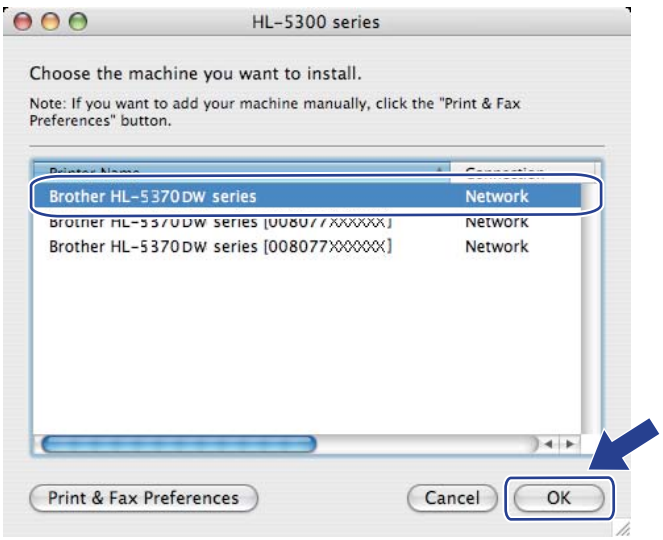
5 Choose **Driver Install Only**, and then click **Next**. Follow the on-screen instructions. Then, restart your Macintosh.



6 The Brother software will search for the Brother printer. During this time the following screen will appear.



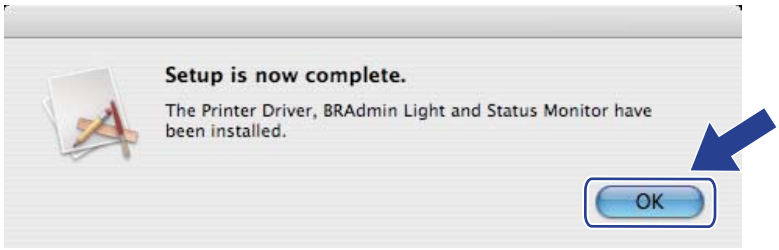
7 Choose the printer you wish to connect, and then click **OK**.



Note

- If there is more than one of the same printer model connected on your network, the MAC Address (Ethernet Address) will be displayed after the model name. You can also confirm your IP Address by scrolling to the right.
- You can find your printer's MAC Address (Ethernet Address) and the IP Address by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 117.

8 When this screen appears, click **OK**.



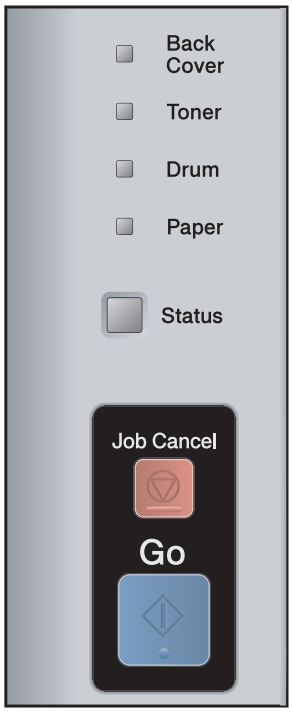
OK! **Setup is now complete.**

8 Control panel features

Overview

HL-5350DN and HL-5370DW have five LEDs (**Back Cover**, **Toner**, **Drum**, **Paper**, **Status**) and two buttons (**Job Cancel** and **Go**) on the control panel.

HL-5380DN has one back lit Liquid Crystal Display (LCD), seven buttons and two Light Emitting Diodes (LEDs) on the control panel. The LCD is a 16 character single line display.





With the control panel you can do the following:

Change the print server settings using the control panel (For HL-5380DN)

See *NETWORK menu (For HL-5380DN)* on page 111.

Print the Printer Settings Page

See *Printing the Printer Settings Page* on page 117.

Reset the network settings to the factory default

See *Reset the network settings to the factory default* on page 118.

Enable or Disable the wireless network (For HL-5370DW)

See *Enabling or disabling the wireless network (For HL-5370DW)* on page 119.

NETWORK menu (For HL-5380DN)

Before using your Brother product in a network environment, you need to configure the correct TCP/IP settings.

In this section, you will learn how to configure the network settings using the control panel, located on the front of the machine.

The NETWORK menu selections of the control panel allow you to set up the Brother machine for your network configuration. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) to display the main menu. Then press **+** or **-** to choose NETWORK. Proceed to the menu selection you wish to configure. For additional infomation on the menu see *Function table and factory default settings (For HL-5380DN)* on page 188.

Please note that the machine is supplied with the BRAdmin Light utility and Web Based Management (web browser), which also can be used to configure many aspects of the network. See *Changing the print server settings* on page 16 for a wired connection.

TCP/IP

This menu has 7 sections: BOOT METHOD, IP ADDRESS=, SUBNET MASK=, GATEWAY=, IP BOOT TRIES, APIPA and IPV6.

BOOT METHOD

This selection controls how the machine obtains an IP address. The default setting is AUTO.

Note

If you do not want your print server configured via DHCP, BOOTP or RARP, you must set the BOOT METHOD to STATIC so that the print server has a static IP address. This will prevent the print server from trying to obtain an IP address from any of these systems. To change the Boot Method, use the machine's control panel, BRAdmin Light utility or Web Based Management (web browser).

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose TCP/IP.
   Press **Set**.
4. Press **+** or **-** to choose BOOT METHOD.
   Press **Set**.
5. Press **+** or **-** to choose AUTO [1], STATIC [2], RARP [3], BOOTP [4] or DHCP [5].
   Press **Set**.

[1] AUTO mode
In this mode, the machine will scan the network for a DHCP server, if it can find one, and if the DHCP server is configured to allocate an IP address to the machine, then the IP address supplied by the DHCP server will be used. If no DHCP server is available, then the machine will scan for a BOOTP server. If a BOOTP server is available, and it is configured correctly, the machine will take its IP address from the BOOTP server. If a BOOTP server is not available, the machine will scan for a RARP server. If a RARP server also does not answer, the IP Address is scanned

through APIPA facility, see *Using APIPA to configure the IP address* on page 180. After it is initially powered ON, it may take a few minutes for the machine to scan the network for a server.

2 STATIC mode
In this mode the machine's IP address must be manually assigned. Once entered the IP address is locked to the assigned address.

3 RARP mode
The Brother print server IP address can be configured using the Reverse ARP (RARP) service on your host computer. For more information on RARP, see *Using RARP to configure the IP address* on page 180.

4 BOOTP mode
BOOTP is an alternative to RARP that has the advantage of allowing configuration of the subnet mask and gateway. For more information on BOOTP, see *Using BOOTP to configure the IP address* on page 179.

5 DHCP mode
Dynamic Host Configuration Protocol (DHCP) is one of several automated mechanisms for IP address allocation. If you have a DHCP server in your network (typically a UNIX, Windows® 2000/XP, Windows Vista® network) the print server will automatically obtain its IP address from a DHCP server and register its name with any RFC 1001 and 1002 compliant dynamic name services.

Note

- If you do not want your print server configured via DHCP, BOOTP or RARP, you must set the BOOT Method to static so that the print server has a static IP address. This will prevent the print server from trying to obtain an IP address from any of these systems. To change the BOOT Method, use the machine's control panel NETWORK menu, BRAdmin applications or Web Based Management (web browser).
- On smaller networks, the DHCP server may be the router.

8

IP ADDRESS

This field displays the current IP address of the machine. If you have chosen a BOOT METHOD of STATIC, enter the IP address that you wish to assign to the machine (check with your network administrator for the IP address to use). If you have chosen a method other than STATIC, the machine will attempt to determine its IP address using the DHCP or BOOTP protocols. The default IP address of your machine will probably be incompatible with the IP address numbering scheme of your network. We recommend that you contact your network administrator for an IP address for the network the unit will be connected on.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose TCP/IP.
   Press **Set**.
4. Press **+** or **-** to choose IP ADDRESS=.
   Press **Set**. The first part of the number will be blinking.
5. Press **+** or **-** to increase or decrease the number.
   Press **Set** to go to the next number.
6. Repeat this process until you have set your IP address.
7. Press **Set** to finish the IP address.
   An asterisk appears at the end of the LCD.

SUBNET MASK

This field displays the current subnet mask used by the machine. If you are not using DHCP or BOOTP to obtain the subnet mask, enter the desired subnet mask. Check with your network administrator for the subnet mask to use.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose `NETWORK`.
   Press **Set**.
3. Press **+** or **-** to choose `TCP/IP`.
   Press **Set**.
4. Press **+** or **-** to choose `SUBNET MASK=`.
   Press **Set**. The first part of the number will be blinking.
5. Press **+** or **-** to increase or decrease the number.
   Press **Set** to go to the next number.
6. Repeat this process until you have set your Subnet Mask address.
7. Press **Set** to finish the Subnet Mask address.
   An asterisk appears at the end of the LCD.

GATEWAY

This field displays the current gateway or router address used by the machine. If you are not using DHCP or BOOTP to obtain the gateway or router address, enter the address you wish to assign. If you do not have a gateway or router, leave this field blank. Check with your network administrator if you are unsure.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose `NETWORK`.
   Press **Set**.
3. Press **+** or **-** to choose `TCP/IP`.
   Press **Set**.
4. Press **+** or **-** to choose `GATEWAY=`.
   Press **Set**. The first part of the number will be blinking.
5. Press **+** or **-** to increase or decrease the number.
   Press **Set** to go to the next number.
6. Repeat this process until you have set your Gateway address.
7. Press **Set** to finish the Gateway address.
   An asterisk appears at the end of the LCD.

IP BOOT TRIES

This field displays how many times the printer attempts to scan the network to obtain the IP address through the BOOT METHOD you have set (see *BOOT METHOD* on page 111). The default setting is 3.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose TCP/IP.
   Press **Set**.
4. Press **+** or **-** to choose IP BOOT TRIES.
   Press **Set**.
5. Press **+** or **-** to set the number of times you wish to try to obtain the IP address.
   Press **Set**.

APIPA

The setting of ON will cause the print server to automatically allocate a Link-Local IP address in the range (169.254.1.0 - 169.254.254.255) when the print server cannot obtain an IP address through the Boot Method you have set (see *BOOT METHOD* on page 111). Choosing OFF means the IP address doesn't change, when the print server cannot obtain an IP address through the Boot Method you have set. The default setting for APIPA is ON.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose TCP/IP.
   Press **Set**.
4. Press **+** or **-** to choose APIPA.
   Press **Set**.
5. Press **+** or **-** to choose ON or OFF.
   Press **Set**.

IPV6

This machine is compatible with IPv6, the next generation internet protocol. If you want to use the IPv6 protocol, choose ON. The default setting for IPv6 is OFF. For more information on the IPv6 protocol, visit http://solutions.brother.com/.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose TCP/IP.
   Press **Set**.
4. Press **+** or **-** to choose IPV6.
   Press **Set**.
5. Press **+** or **-** to choose ON or OFF.
   Press **Set**.

Note

If you set IPv6 to ON, turn off the power switch and then turn it back on to enable this protocol.

ETHERNET

Ethernet link mode. AUTO allows the print server to operate in 100BASE-TX full or half duplex, or in 10BASE-T full or half duplex mode by auto negotiation.

100 BASE-TX Full Duplex (100B-FD) or Half Duplex (100B-HD) and 10BASE-T Duplex (10B-FD) or Half Duplex (10B-HD) will fix the print server link mode. This change is valid after the print server has been reset. The default setting is AUTO.

Note

If you incorrectly set this value, you may not be able to communicate with your print server.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose ETHERNET.
   Press **Set**.
4. Press **+** or **-** to choose AUTO, 100B-FD, 100B-HD, 10B-FD or 10B-HD.
   Press **Set**.

FACTORY RESET

The FACTORY RESET allows you to reset the print server back to its factory default settings.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose NETWORK.
   Press **Set**.
3. Press **+** or **-** to choose FACTORY RESET.
   Press **Set**.
4. When RESTART PRINTER? appears, press **Set** again.

Printing the Printer Settings Page

Note

Node name: Node name appears on the Printer Settings Page. The default node name of the print server in the machine is “BRNxxxxxxxxxxxx” for a wired network or “BRWxxxxxxxxxxxx” for a wireless network (For HL-5370DW).

The Printer Settings Page prints a report listing all the current printer settings including the network settings.

For HL-5350DN and HL-5370DW

You can print the Printer Settings Page using **Go** of the machine.

1. Make sure that the front cover is closed and the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Press **Go** three times within 2 seconds. The machine will print the current Printer Settings Page.

Note

If the **IP Address** on the Printer Settings Page shows **0.0.0.0**, wait for one minute and try again.

For HL-5380DN

You can print the Printer Settings Page using the control panel.

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose `INFORMATION`.
   Press **Set**.
3. Press **+** or **-** to choose `PRINT SETTINGS`.
   Press **Set**.

Note

If the **IP Address** on the Printer Settings Page shows **0.0.0.0**, wait for one minute and try again.

Reset the network settings to the factory default

You can reset the print server back to its factory default settings (resetting all information such as the password and IP address information.)

Note

You can also reset the print server back to its factory default settings using the BRAdmin applications or Web Based Management (web browser). For more information, see *Changing the print server settings* on page 16.

For HL-5350DN and HL-5370DW

1. Turn off the machine.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down **Go** as you turn on the power switch. Keep **Go** pressed down until the all LEDs light up, and then the **Status** LED turns off.
4. Release **Go**. Make sure that all the LEDs turn off.
5. Press **Go** six times. Make sure that all the LEDs light up to indicate the print server has been reset to its factory default settings. The machine will restart.

For HL-5380DN

1. Press any of the Menu buttons (**+**, **-**, **Set** or **Back**) of the control panel on your machine.
2. Press **+** or **-** to choose `NETWORK`.
   Press **Set**.
3. Press **+** or **-** to choose `FACTORY RESET`.
   Press **Set**.
4. When `RESTART PRINTER?` appears, press **Set** again. The machine will restart.

Enabling or disabling the wireless network (For HL-5370DW)

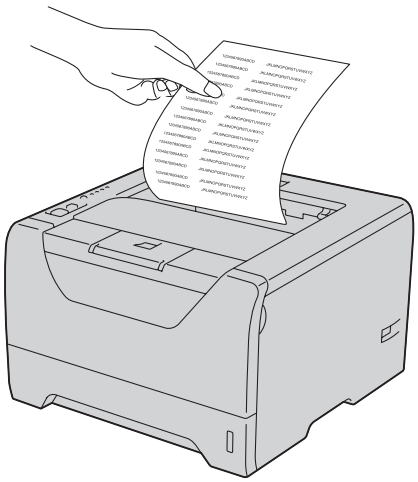
If you want to switch the wireless network to enabled/disabled (disabled is the default), please follow these steps:

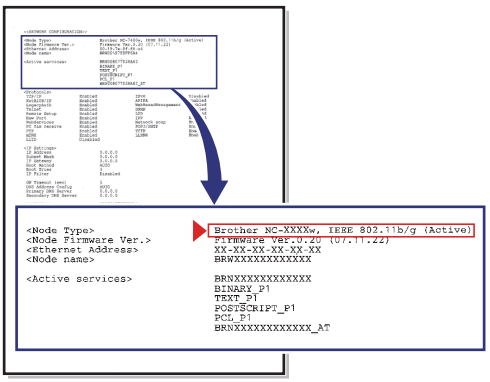
1. Make sure that the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready state.
3. Hold down **Go** for 10 seconds. Release **Go** when the printer prints a Network Configuration page that indicates the current network settings.

Note

If you release **Go** in less than 10 seconds, the printer will change to the reprint mode.

4. Check the text to the right of **IEEE 802.11b/g** in the **Node Type** section. **Active** means that the wireless setting is enabled and **Inactive** means that the wireless setting is disabled.





Note

You can switch the wireless network to enabled/disabled, using the BRAdmin applications or Web Based Management (web browser). For more information, see *Changing the print server settings* on page 16.

9 Driver Deployment Wizard (Windows® only)

Overview

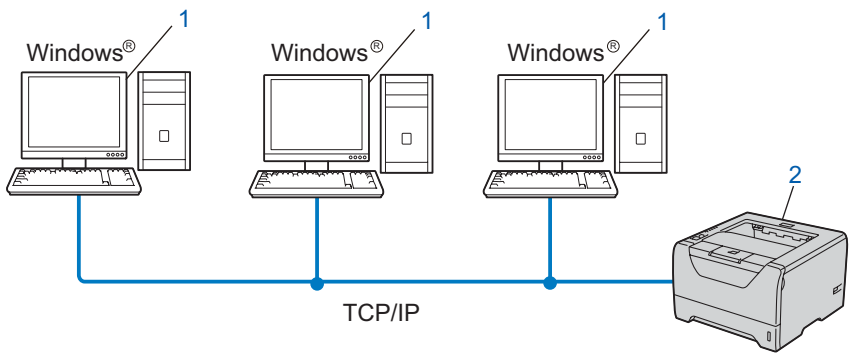
The Driver Deployment Wizard software can be used to ease the installation or even automate the installation of a locally connected or network connected printer. The Driver Deployment Wizard can also be used to create self running executable files which when run on a remote PC, completely automates the installation of a printer driver. The remote PC does not have to be connected to a network.

Connection methods

The Driver Deployment Wizard supports the three connection methods.

Peer-to-peer

The device is connected to the network but each user prints directly to the printer WITHOUT printing through a central queue.

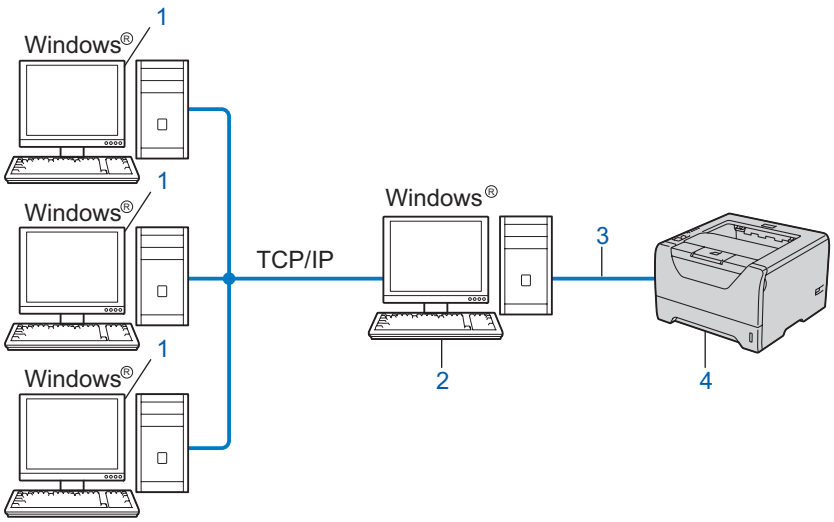


1) Client computer

2) Network printer (your machine)

Network Shared

The device is connected to a network and a central print queue is used to manage all print jobs.



1) Client computer

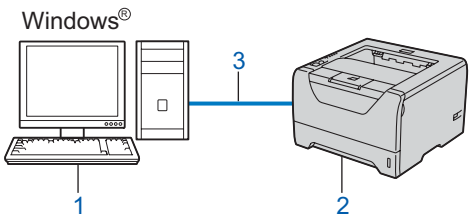
2) Also known as “Server” or “Print server”

3) TCP/IP, USB or parallel

4) Printer (your machine)

Local Printer (USB or parallel)

The device is connected to the computer using an USB cable or parallel cable.



1) Client computer

2) Printer (your machine)

3) USB or parallel

How to install the Driver Deployment Wizard software

1. Put the supplied CD-ROM into your CD-ROM drive. If the model name screen appears, choose your machine. If the language screen appears, choose your language.
2. The CD-ROM main menu will appear. Click **Install Other Drivers or Utilities**.
3. Choose the **Driver Deployment Wizard** installation program.

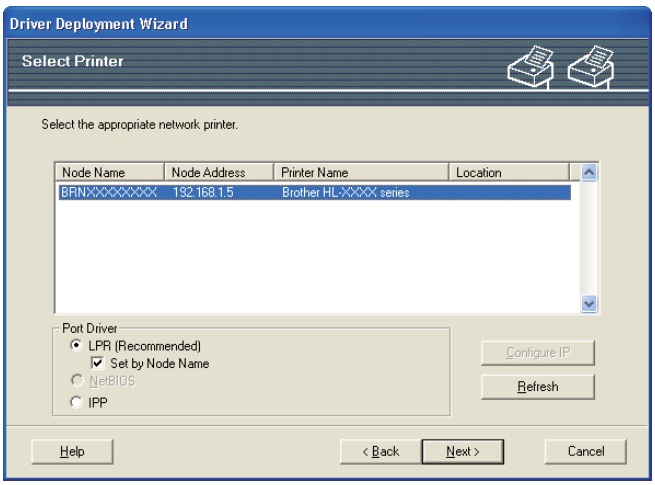
Note

For Windows Vista®, when the **User Account Control** screen appears, click **Continue**.

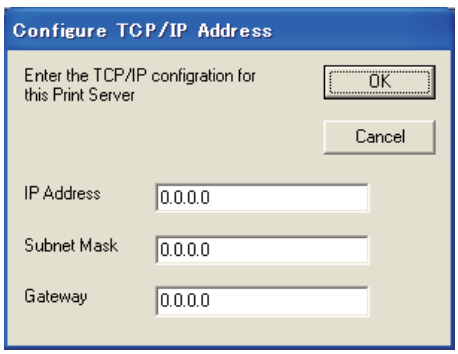
4. Click **Next** in response to the Welcome message.
5. Read the license agreement carefully. Then follow the on-screen instructions.
6. Click **Finish**. Now the Driver Deployment Wizard software has been installed.

Using the Driver Deployment Wizard software

1. When you run the Wizard for the first time you will see a welcome screen. Click **Next**.
2. Choose **Printer**, and then click **Next**.
3. Choose your connection type to the printer that you want to print to.
4. Choose the option you require, and follow the on-screen instructions.
   If you choose **Brother Peer-to-Peer Network Printer**, the following screen is displayed.



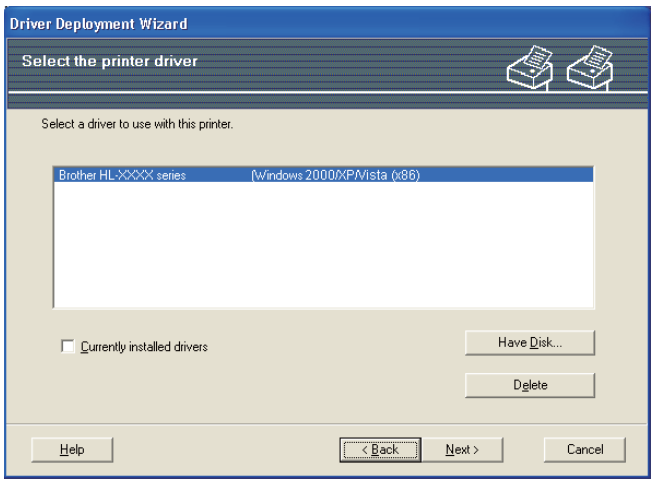
■ **Setting the IP Address**
If the machine does not have an IP address, the Wizard will allow you to change the IP address by choosing the machine from the list and by choosing the Configure IP option. A dialog box then appears which allows you to specify information such as the IP address, subnet mask and also the gateway address.



5. Choose the machine you wish to install.
   ■ If the printer driver you wish to use is installed on your computer:
   Check the box of **Currently installed drivers** and choose the machine you wish to install, and then click **Next**.
   ■ If the driver you wish to use is not installed on your computer:
   1 Click **Have Disk...**.
   2 Choose the OS you wish to use, and then click **OK**.
   3 Click **Browse...** and choose the appropriate printer driver that is contained in the CD-ROM or in the network share. Click **Open**.

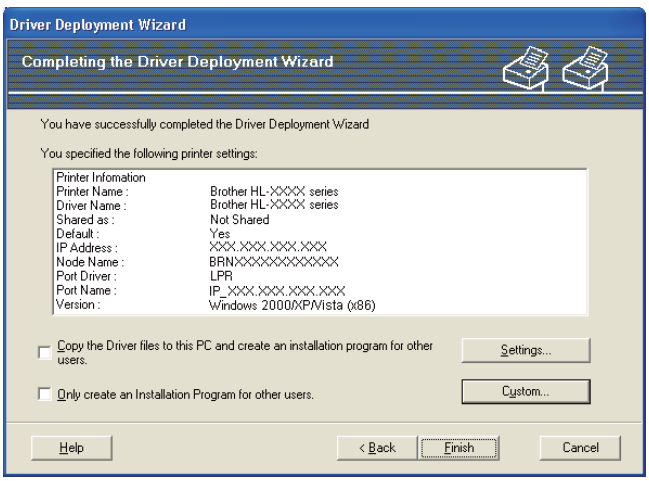
4 For example, choose the “**X:\\install\your language\PCL\win2kxpvista** [1]” folder (where X is your drive letter). Click **OK**.

[1] **win2kxpvista** folder for 32-bit OS users and **winxpx64vista64** folder for 64-bit OS users



6 Click **Next** after you choose the correct driver.

7 A summary screen will appear. Confirm the settings of the driver.



■ Creating an executable file

The Driver Deployment Wizard software can also be used to create self running .EXE files. These self-running .EXE files can be saved to the network, copied to a CD-ROM, USB memory or even E-mailed to another user. Once run, the driver and its settings are automatically installed without any user intervention.

■ Copy the Driver files to this PC and create an installation program for other users.

Choose this option if you wish to install the driver onto your computer and also create a self-running executable file for use with another computer using the same operating system as your own.

■ Only create an Installation Program for other users.

Choose this option if the driver is already installed on your computer and you wish to create a self-running executable file without installing the driver again on your own computer.

Note

- If you work in a “queue” based network and you create an executable file for another user who does not have access to the same printer queue that you define into the executable file, the driver when installed on the remote computer will default to LPT1 printing.
- If you check the box of **Currently installed drivers** in ❺, you can change the default settings of the printer driver, such as paper size by clicking **Custom...**.

❽ Click **Finish**. The driver is automatically installed to your computer.

10 Web Based Management

Overview

A standard Web Browser can be used to manage your machine using the HTTP (Hyper Text Transfer Protocol). You can get the following information from a machine on your network using a web browser.

- Machine status information
- Change network settings such as TCP/IP information
- Software version information of the machine and print server
- Change network and machine configuration details
- Log data for printed job

Note

We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1.

You must use the TCP/IP protocol on your network and have a valid IP address programmed into the print server and your computer.

Note

- To learn how to configure the IP address on your machine, see *Setting the IP address and subnet mask* on page 13.
- You can use a web browser on most computing platforms, for example, Macintosh and UNIX users are also able to connect to the machine and manage it.
- You can also use the BRAdmin applications to manage the machine and its network configuration.
- This print server also supports HTTPS for secure management using SSL. See *Managing your network printer securely* on page 145.

How to configure the machine settings using Web Based Management (web browser)

A standard web browser can be used to change your print server settings using the HTTP (Hyper Text Transfer Protocol).

Note

To use a web browser, you will need to know the IP address or node name of the print server.

1. Start your web browser.
2. Type "`http://printer's IP address/`" into your browser. (where "`printer's IP address`" is the printer's IP address)
   - For example:
     `http://192.168.1.2/`

Note

- If you have edited the hosts file on your computer or are using a Domain Name System (DNS), you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxxx" for a wired network or "BRWxxxxxxxxxxx" for a wireless network.
- For Macintosh users, you can have easy access to the Web Based Management System by clicking the machine icon on Status Monitor screen. For more information, see the *User's Guide* on the CD-ROM.

If you want to configure the print server settings, go to ❸.
If you want to configure the log browser settings, go to ❼.

3. Click **Network Configuration**.
4. Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".
5. Click **OK**.
6. You can now change the print server settings.

Note

If you have changed the protocol settings, restart the printer after clicking **Submit** to activate the configuration.

7. Click **Administrator Settings**.
8. Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".

9. Click **OK**.

10. Choose the **Log Configuration** tag. Choose **On** and then choose **Maximum log file size** from the pull down menu. Click **Submit**.

11. Click **Administrator Settings** again. Choose the **View Print Log** tag. Check the items you wish to view, and choose the format you wish to export the data. Click **Submit**.

Note

If you have not printed any data, no log data will appear.

12. You can now view the log data for the printed job.

11 Network printing from Windows® basic TCP/IP Peer-to-Peer printing

Overview

To connect your machine to your network, you need to follow the steps in the *Quick Setup Guide*. We recommend that you use the Brother installer application on the CD-ROM which we have provided with the machine. By using this application, you can easily connect your machine to your network and install the network software and printer driver which you need to complete the configuration of your machine for a network. You will be guided by the on-screen instructions until you are able to use your Brother network machine.

If you are a Windows® user and want to configure your machine without using the Brother installer application, use the TCP/IP protocol in a Peer-to-Peer environment. Please follow the instructions in this chapter. This chapter explains how to install the network software and the printer driver which you will need to be able to print using your network machine.

Note

- You must configure the IP address on your machine before you proceed with this chapter. If you need to configure the IP address, see *Chapter 2* first.
- Verify the host computer and the machine are either on the same subnet, or that the router is properly configured to pass data between the two devices.
- If you are connecting to a Network Print Queue or Share (printing only), see *Installation when using a Network Print Queue or Share* on page 184 for installation details.
- The default password for Brother print server is “**access**”.

Configuring the standard TCP/IP port

Printer driver not yet installed

For Windows Vista® and Windows Server® 2008

1. (For Windows Vista®) Click the  button, **Control Panel**, **Hardware and Sound**, and then **Printers**. (For Windows Server® 2008) Click the **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.
2. Click **Add a printer**.
3. Choose **Add a local printer**.
4. You must now choose the correct Network printing port. Choose **Create a new port** and then **Standard TCP/IP Port** from the pull-down window, then click **Next**.
5. Choose **TCP/IP Device** from the pull-down window of **Device type**. Enter the IP address, or the node name you wish to configure. The Wizard will automatically enter the Port name information for you, then click **Next**.
6. Windows Vista® and Windows Server® 2008 will now contact the printer that you specified. If you did not specify the correct IP address or name then an error dialog will appear.
7. Now that you have configured the port, you must specify which printer driver you wish to use. Choose the appropriate driver from the list of supported printers. If you are using a driver supplied with the machine on the CD-ROM then choose the **Have Disk** option to browse to the CD-ROM.
8. For example, choose the "**X:\\install\your language\PCL\win2kxpvista** [1]" folder (where X is your drive letter). Click **Open**.

   [1] **win2kxpvista** folder for 32-bit OS users and **winxpx64vista64** folder for 64-bit OS users
9. Specify a name and click **Next**.

Note

- When the **User Account Control** screen appears, click **Continue**.
- If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click **Install this driver software anyway** to continue with the installation.

10. Continue through the Wizard clicking **Finish** when complete.

For Windows® 2000/XP and Windows Server® 2003

1. For Windows® XP and Windows Server® 2003:
   Click the **Start** button and choose **Printers and Faxes**.
   For Windows® 2000:
   Click the **Start** button, choose **Settings** and then **Printers**.
2. For Windows® XP and Windows Server® 2003:
   Click **Add a printer** to start the **Add Printer Wizard**.
   For Windows® 2000:
   Double-click the **Add Printer** icon to start the **Add Printer Wizard**.
3. Click **Next** when you see the **Welcome to the Add Printer Wizard** screen.
4. Choose **Local printer** and deselect the **Automatically detect and install my Plug and Play printer** option, then click **Next**.
5. You must now choose the correct Network printing port. Choose **Create a new port** and choose **Standard TCP/IP Port** from the pull-down window, then click **Next**.
6. The **Add Standard TCP/IP Printer Port Wizard** will now appear. Click **Next**.
7. Enter the IP address, or the node name you wish to configure. The Wizard will automatically enter the Port name information for you, then click **Next**.
8. Windows® 2000/XP and Windows Server® 2003 will now contact the machine that you specified. If you did not specify the correct IP address or name then an error dialog will appear.
9. Click **Finish** to complete the Wizard.
10. Now that you have configured the port, you must specify which printer driver you wish to use. Choose the appropriate driver from the list of supported printers. If you are using a driver supplied with the machine on the CD-ROM then choose the **Have Disk** option to browse to the CD-ROM.
11. For example, choose the "**X:\\install\your language\PCL\win2kxpvista** [1]" folder (where X is your drive letter). Click **Open**.

    [1] **win2kxpvista** folder for 32-bit OS users and **winxpx64vista64** folder for 64-bit OS users
12. Specify a name and click **Next**.
13. Continue through the Wizard clicking **Finish** when complete.

Printer driver already installed

If you have already installed the printer driver and wish to configure it for network printing, follow these steps:

1. For Windows Vista® and Windows Server® 2008:

   (For Windows Vista®) Click the  button, **Control Panel**, **Hardware and Sound**, and then **Printers**.
   (For Windows Server® 2008) Click the **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.

   For Windows® XP and Windows Server® 2003:
   Click the **Start** button and choose **Printers and Faxes** windows.

   For Windows® 2000:
   Click the **Start** button and choose **Settings** and then **Printers**.

2. Right-click on the printer driver you wish to configure, and then choose **Properties**.
3. Click the **Ports** tab and click **Add Port**.
4. Choose the port that you wish to use. Typically this would be **Standard TCP/IP Port**. Then click the **New Port...** button.
5. The **Standard TCP/IP Port Wizard** will start. Click **Next**.
6. Enter the IP address of your network printer. Click **Next**.
7. Click **Finish**.
8. Close **Printer Ports** and **Properties** dialog box.

Other sources of information

See *Configuring your machine for a network* on page 10 and *Configuring your machine for a wireless network (For HL-5370DW)* on page 18 to learn how to configure the IP address of the machine.

12 Internet printing for Windows®

Overview

Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 users can print using TCP/IP using the standard Network Printing IPP protocol software built into Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 installation.

Note

- You must configure the IP address on your printer before you proceed with this chapter. If you need to configure the IP address, see *Chapter 2* first.
- Verify the host computer and machine are either on the same subnet, or that the router is properly configured to pass data between the two devices.
- The default password for Brother print servers is "**access**".
- This print server also supports the IPPS printing, see *Printing documents securely using IPPS* on page 149.

IPP printing for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008

Use the following instructions if you wish to use the IPP printing capabilities of Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008.

For Windows Vista® and Windows Server® 2008

1. (For Windows Vista®) Click the  button, **Control Panel**, **Hardware and Sound**, and then **Printers**. (For Windows Server® 2008) Click the **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.
2. Click **Add a printer**.
3. Choose **Add a network, wireless or Bluetooth printer**.
4. Click **The printer that I want isn't listed**.
5. Choose **Select a shared printer by name** and then enter the following in the URL field: `http://printer's IP address:631/ipp` (where "`printer's IP address`" is the printer's IP address or the node name.)

Note

If you have edited the hosts file on your computer or are using a Domain Name System (DNS), you can also enter the DNS name of the print server. As the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117.

The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx” for a wired network or “BRWxxxxxxxxxxx” for a wireless network.

6 When you click **Next**, Windows Vista® and Windows Server® 2008 will make a connection with the URL that you specified.

■ **If the printer driver has already been installed:**

You will see the printer selection screen in the **‘Add printer’ wizard**. Click **OK**.

If the appropriate printer driver is already installed on your computer, Windows Vista® and Windows Server® 2008 will automatically use that driver. In this case, you will simply be asked if you wish to make the driver the default printer, after which the Driver installation wizard will complete. You are now ready to print.

Go to ⓫.

■ **If the printer driver has NOT been installed:**

One of the benefits of the IPP printing protocol is that it establishes the model name of the printer when you communicate with it. After successful communication you will see the model name of the printer automatically. This means that you do not need to inform Windows Vista® and Windows Server® 2008 about the type of printer driver to be used.

Go to ❼.

7 If your printer is not in the list of supported printers, click **Have Disk**. You will then be asked to insert the driver disk.

8 Click **Browse...** and choose the appropriate Brother printer driver that is contained in the CD-ROM or in the network share. Click **Open**.

For example, choose the “**X:\\install\your language\PCL\win2kxpvista** [1]” folder (where X is your drive letter). Click **Open**.

[1] **win2kxpvista** folder for 32-bit OS users and **winxpx64vista64** folder for 64-bit OS users

9 Click **OK**.

10 Specify the model name of the printer. Click **OK**.

Note

- When the **User Account Control** screen appears, click **Continue**.
- If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click **Install this driver software anyway** to continue with the installation. The **Add Printer Wizard** will then complete.

11 You will see the **Type a printer name** screen in the **Add Printer Wizard**. Check the **Set as the default printer** check box if you want to use this printer as the default printer, and then click **Next**.

12 To test the printer connection, click **Print a test page**, and then click **Finish** and the printer is now configured and ready to print.

For Windows® 2000/XP and Windows Server® 2003

1. For Windows® XP and Windows Server® 2003:
   Click the **Start** button and choose **Printers and Faxes**.
   For Windows®2000:
   Click the **Start** button and choose **Settings** and then **Printers**.

2. For Windows® XP and Windows Server® 2003:
   Click **Add a printer** to start the **Add Printer Wizard**.
   For Windows® 2000:
   Double-click the **Add Printer** icon to start the **Add Printer Wizard**.

3. Click **Next** when you see the **Welcome to the Add Printer Wizard** screen.

4. Choose **Network Printer**.
   For Windows® XP and Windows Server® 2003:
   Choose **A network printer, or a printer attached to another computer**.
   For Windows® 2000:
   Choose **Network Printer**.

5. Click **Next**.

6. For Windows® XP and Windows Server® 2003:
   Choose **Connect to a printer on the Internet or on a home or office network** and then enter the following in the URL field:
   `http://printer's IP address:631/ipp`
   (where "`printer's IP address`" is the printer's IP address or the node name.)
   For Windows® 2000:
   Choose **Connect to a printer on the Internet or on your intranet** and then enter the following in the URL field:
   `http://printer's IP address:631/ipp`
   (Where "`printer's IP address`" is the printer's IP address or the node name).

Note

If you have edited the hosts file on your computer or are using a Domain Name System (DNS), you can also enter the DNS name of the print server. As the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxxxx" for a wired network or "BRWxxxxxxxxxxxx" for a wireless network.

7 When you click **Next**, Windows® 2000/XP and Windows Server® 2003 will make a connection with the URL that you specified.

■ **If the printer driver has already been installed:**

If the appropriate printer driver is already installed on your computer, Windows® 2000/XP and Windows Server® 2003 will automatically use that driver. In this case, you will simply be asked if you wish to make the driver the default printer, after which the Driver installation wizard will complete. You are now ready to print.
Go to ⓬.

■ **If the printer driver has NOT been installed:**

One of the benefits of the IPP printing protocol is that it establishes the model name of the printer when you communicate with it. After successful communication you will see the model name of the printer automatically. This means that you do not need to inform Windows® 2000 about the type of printer driver to be used.
Go to ❽.

8 The driver installation starts automatically.

Note

If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click **Continue Anyway** [1] to continue with the installation.

[1] **Yes** for Windows® 2000 users

9 Click **OK** when you see the **Insert Disk** screen.

10 Click **Browse...** and choose the appropriate Brother printer driver that is contained in the CD-ROM or in the network share. Click **Open**.
For example, choose the "**X:\\install\your language\PCL\win2kxpvista** [1]" folder (where X is your drive letter). Click **Open**.

[1] **win2kxpvista** folder for 32-bit OS users and **winxpx64vista64** folder for 64-bit OS users

11 Click **OK**.

12 Check **Yes** if you want to use this printer as the default printer. Click **Next**.

13 Click **Finish** and the printer is now configured and ready to print. To test the printer connection, print a test page.

Specifying a different URL

Please note that there are several possible entries that you can enter for the URL field.

`http://printer's IP address:631/ipp`

This is the default URL and we recommend that you use this URL.

`http://printer's IP address:631/ipp/port1`

This is for HP Jetdirect compatibility.

`http://printer's IP address:631/`

Note

If you forget the URL details, you can simply enter the above text (`http://printer's IP address/`) and the printer will still receive and process data.

Where "`printer's IP address`" is the printer's IP address or the node name.

- For example:

  `http://192.168.1.2/`

  `http://BRN123456765432/`

Other sources of information

For how to configure the IP address of the printer, see *Configuring your machine for a network* in Chapter 2.

13 Network printing from Macintosh using the BR-Script 3 driver

Overview

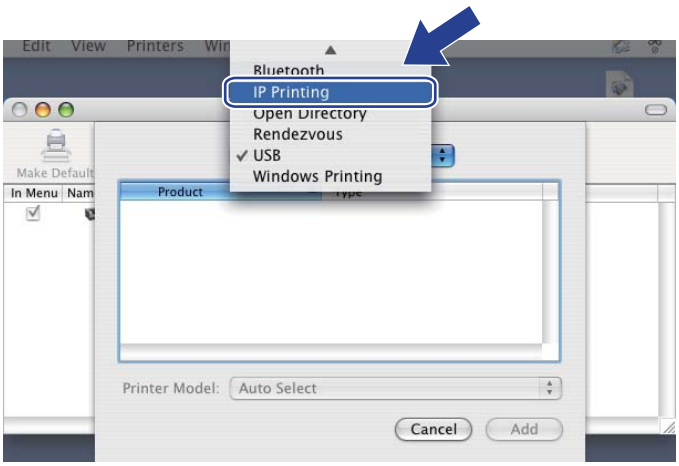
This chapter explains how to configure the BR-Script 3 (PostScript® 3™ language emulation) printer driver on a Network.

How to choose the printer driver (TCP/IP)

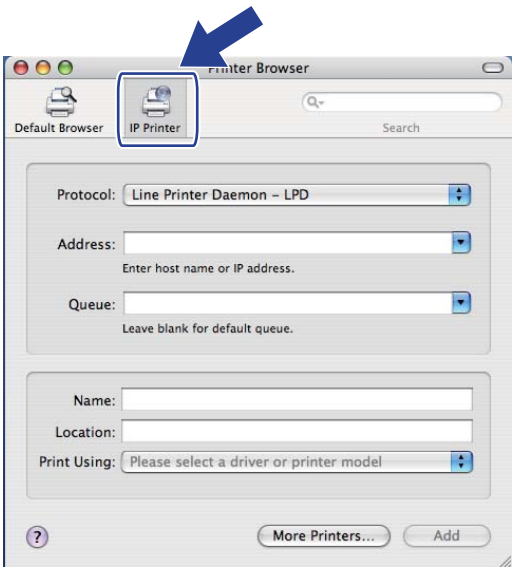
For Mac OS X 10.3.9 to 10.4.x users

1. Turn on your Macintosh.
2. From the **Go** menu, choose **Applications**.
3. Open the **Utilities** folder.
4. Double-click the **Printer Setup Utility** icon.
5. Click **Add**.
6. (Mac OS X 10.3.9) Choose **IP Printing**.
   (Mac OS X 10.4.x) Choose **IP Printer**.

(Mac OS X 10.3.9)

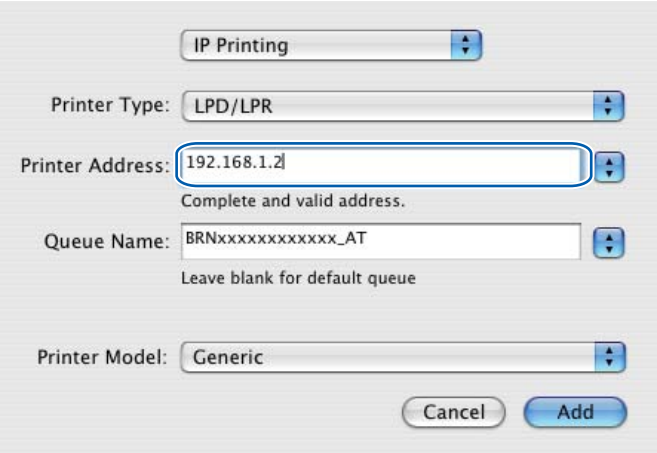


(Mac OS X 10.4.x)

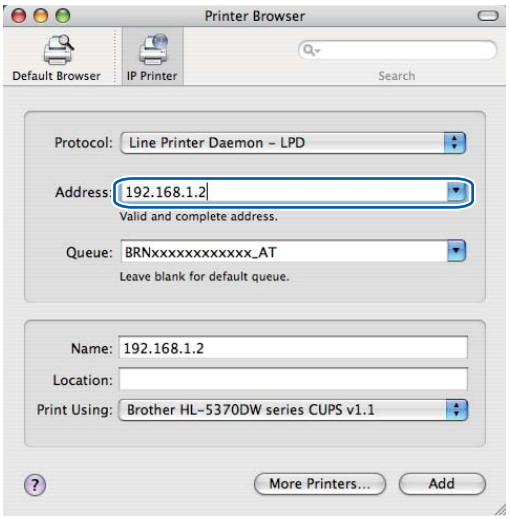


7 (Mac OS X 10.3.9) Enter the IP address of the printer into the **Printer Address** box.
(Mac OS X 10.4.x) Enter the IP address of the printer into the **Address** box.

(Mac OS X 10.3.9)



(Mac OS X 10.4.x)

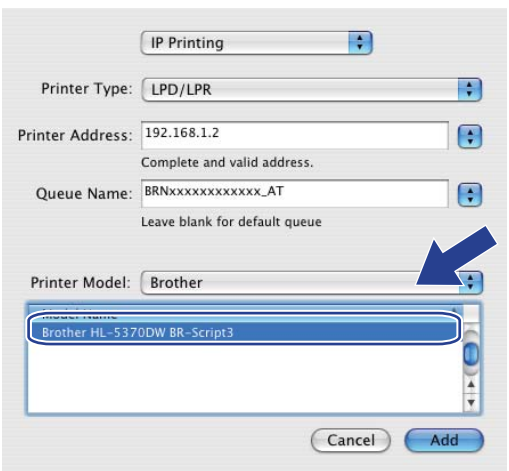


Note

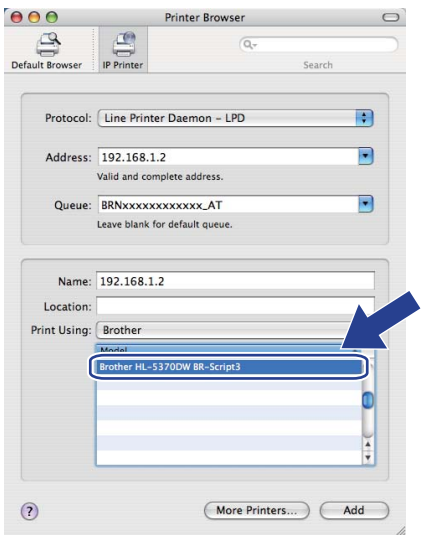
- The Printer Settings Page will allow you to confirm the IP address. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117.
- When specifying the **Queue Name (Queue)**, use the PostScript® service "BRNxxxxxxxxxxxx_AT" for Macintosh. Where "xxxxxxxxxxxx" is your machine's MAC Address (Ethernet Address).

8 From the **Printer Model (Print Using)** pop-up menu, choose your model. For example, choose **Brother HL-5370DW BR-Script3**.

(Mac OS X 10.3.9)



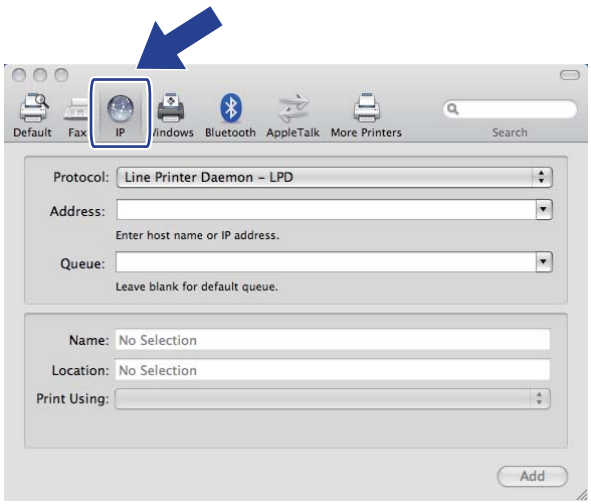
(Mac OS X 10.4.x)



9 Click **Add** and the printer will be available from the **Printer List**. The printer is now ready to print.

For Mac OS X 10.5.x

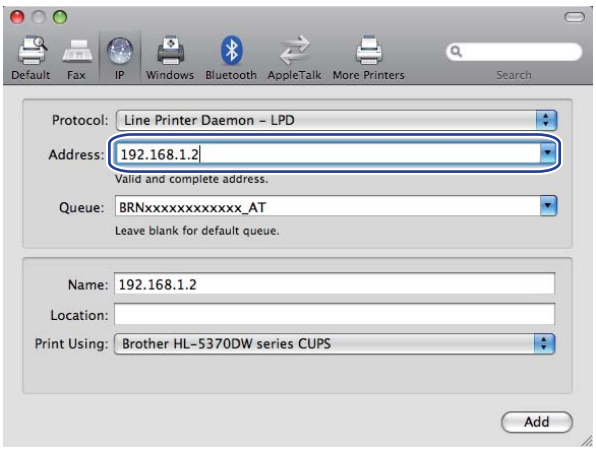
1. Turn on your Macintosh.
2. Choose **System Preferences** from the Apple menu.
3. Choose **Print & Fax**.
4. Click **+** which is located below the **Printers** section.
5. Choose **IP**.



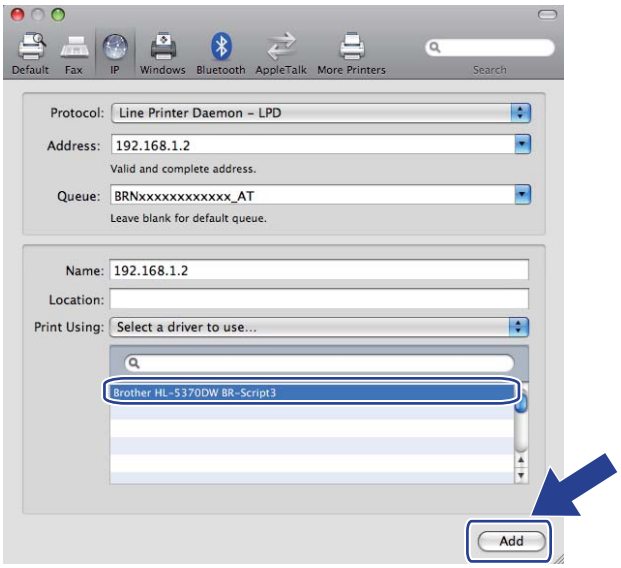
6. Choose **Line Printer Daemon - LPD** from the **Protocol** list.
7. Enter the TCP/IP address or DNS Name of the printer into the **Address** box.

Note

When specifying the **Queue**, use the PostScript® service "BRNxxxxxxxxxxxx_AT" for Macintosh. Where "xxxxxxxxxxxx" is your machine's MAC Address (Ethernet Address).



8 From the **Print Using** pop-up menu, choose your model. For example, choose **Brother HL-5370DW BR-Script3**.



9 Click **Add** and the printer will be available from the **Printers**. The printer is now ready to print.

14 Security features

Overview

In today’s world there are many security threats to your network and the data that travels over it. Your Brother machine employs some of the latest network security and encryption protocols available today. These network features can be integrated into your overall network security plan to help protect your data and prevent unauthorized access to the machine. This chapter explains various security protocols supported and how to configure them.

Security terms

- CA (Certificate Authority)

  A CA is an entity that issues digital certificates (especially X.509 certificates) and vouches for the binding between the data items in a certificate.

- CSR (Certificate Signing Request)

  A CSR is a message sent from an applicant to a CA in order to apply for issue of a certificate. The CSR contains information identifying the applicant, the public key generated by the applicant and the digital signature of the applicant.

- Certificate

  A Certificate is the information that binds together a public key with an identity. The certificate can be used to verify that a public key belongs to an individual. The format is defined by the x.509 standard.

- Digital signature

  A Digital signature is a value computed with a cryptographic algorithm and appended to a data object in such a way that any recipient of the data can use the signature to verify the data's origin and integrity.

- Public key cryptosystem

  A Public key cryptosystem is a modern branch of cryptography in which the algorithms employ a pair of keys (a public key and a private key) and use a different component of the pair for different steps of the algorithm.

- Shared key cryptosystem

  A Shared key cryptosystem is a branch of cryptography involving algorithms that use the same key for two different steps of the algorithm (such as encryption and decryption).

Security protocols

The Brother print server supports the following security protocols.

Note

How to configure the protocol settings, see *How to configure the machine settings using Web Based Management (web browser)* on page 127.

SSL (Secure Socket Layer) / TLS (Transport Layer Security)

These security communication protocols encrypt data to prevent security threats.

Web server (HTTPS)

The internet protocol that the Hyper Text Transfer Protocol (HTTP) uses SSL.

IPPS

The printing protocol that the Internet Printing Protocol (IPP Version 1.0) uses SSL.

SNMPv3

The Simple Network Management Protocol version 3 (SNMPv3) provides user authentication and data encryption to manage network devices securely.

Security methods for E-mail notification

The Brother print server supports the following security methods for E-mail notification.

Note

How to configure the settings of security methods, see *How to configure the machine settings using Web Based Management (web browser)* on page 127.

POP before SMTP (PbS)

The user authentication method for sending E-mail from a client. The client is given permission to use the SMTP server by accessing the POP3 server before sending the E-mail.

SMTP-AUTH (SMTP Authentication)

SMTP-AUTH expands SMTP (the Internet E-mail sending protocol) to include an authentication method that ensures the true identity of the sender is known.

APOP (Authenticated Post Office Protocol)

APOP expands POP3 (the Internet receiving protocol) to include an authentication method that encrypts the password when the client receives E-mail.

Configuring the protocol settings

You can enable or disable each protocol and security method using Web Based Management (web browser).

Note

We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1. To use a web browser, you will need to know the IP address of the print server.

1. Start your web browser.
2. Type `http://printer's IP address/` into your browser (where "`printer's IP address`" is the printer's IP address.)
   - For example:
     `http://192.168.1.2/`

Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxxx" for a wired network or "BRWxxxxxxxxxxx" for a wireless network.

3. Click **Network Configuration**.
4. Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".
5. Click **OK**.
6. Click **Configure Protocol**.
   Now you can configure the protocol settings.

Note

If you change the protocol settings, restart the printer after clicking **Submit** to activate the configuration.

Managing your network printer securely

To manage your network printer securely, you need to use the management utilities with security protocols.

Secure Management using Web Based Management (web browser)

We recommend to use HTTPS and SNMPv3 protocol for secure management. To use the HTTPS protocol, the following printer settings are required.

- A certificate and private key must be installed in the printer. For how to install a certificate and private key, see *Creating and installing a certificate* on page 152.
- The HTTPS protocol must be enabled. To enable the HTTPS protocol, enable **SSL communication is used (port 443)** from the **Advanced Setting** page of **Web Based Management (Web Server)** on the **Configure Protocol** page. For information on how to access the **Configure Protocol** page, see *Configuring the protocol settings* on page 144.

Note

- We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1. To use a web browser, you will need to know the IP address of the print server.
- We recommend to disable the Telnet, FTP and TFTP protocols. Accessing the machine using these protocols is not secure. See *Configuring the protocol settings* on page 144.

1. Start your web browser.
2. Type "`https://Common Name/`" into your browser. (Where "`Common Name`" is the Common Name that you assigned for the certificate, such as an IP address. For how to assign a Common Name for the certificate, see *Creating and installing a certificate* on page 152.)
   - For example:
     `https://192.168.1.2/` (if the Common Name is the printer's IP address)

Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxxx" for a wired network or "BRWxxxxxxxxxxx" for a wireless network.

3 You can now access the printer using HTTPS.
We recommend secure management (SNMPv3) be used along with the HTTPS protocol. If you use the SNMPv3 protocol, follow the steps below.

Note

You can also change the SNMP settings by using BRAdmin Professional 3 or Web BRAdmin.

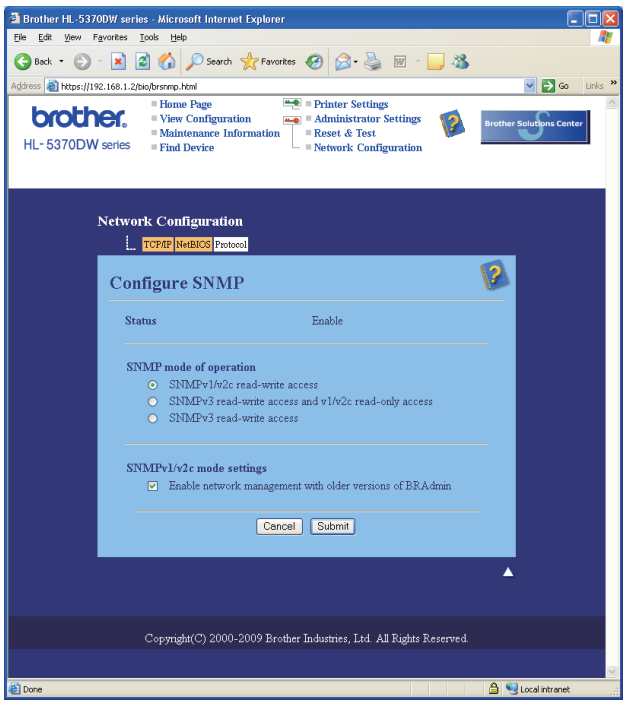
4 Click **Network Configuration**.

5 Enter a user name and a password. The default User Name is “**admin**” and the default Password is “**access**”.

6 Click **Configure Protocol**.

7 Make sure that the **SNMP** setting is enabled, and then click **Advanced Setting** of **SNMP**.

8 You can configure the SNMP settings from the screen below.



We have three SNMP connection modes of operation.

■ **SNMPv3 read-write access**

With this mode the print server uses version 3 of the SNMP protocol. If you want to manage the print server securely, use this mode.

Note

When you use the **SNMPv3 read-write access** mode, please note the following.

- You can manage the print server by using BRAdmin Professional 3, Web BRAdmin or Web Based Management (web browser) only.

- We recommend secure SSL communication (HTTPS) be used.
- Except for BRAdmin Professional 3 and Web BRAdmin, all applications that use SNMPv1/v2c will be restricted. To allow the use of SNMPv1/v2c applications, use **SNMPv3 read-write access and v1/v2c read-only access** or **SNMPv1/v2c read-write access** mode.

■ **SNMPv3 read-write access and v1/v2c read-only access**

In this mode the print server uses the read-write access of version 3 and the read-only access of version 1 and version 2c of the SNMP protocol.

Note

When you use the **SNMPv3 read-write access and v1/v2c read-only access** mode, some of Brother applications (e.g. BRAdmin Light) that access to the print server do not work properly since they authorize the read-only access of version 1 and version 2c. If you want to use all applications, use the SNMPv1/v2c read-write access mode.

■ **SNMPv1/v2c read-write access**

In this mode the print server uses version 1 and version 2c of the SNMP protocol. You can use all Brother applications under this mode. However, it is not secure since it will not authenticate the user and the data will not be encrypted.

Note

For more information, see the Help text in the Web Based Management.

Secure Management using BRAdmin Professional 3 (for Windows®)

To use the BRAdmin Professional 3 utility securely, you need to follow the points below.

- We strongly recommend to use the latest version of the BRAdmin Professional 3 utility or Web BRAdmin that are available as a download from http://solutions.brother.com/. If you use an older version of BRAdmin [1] to manage your Brother machines the user authentication will not be secure.
- If you want to avoid access to your printer from older versions of BRAdmin [1], you need to disable the access from older versions of BRAdmin [1] from **Advanced Setting** of **SNMP** on **Configure Protocol** page using Web Based Management (web browser). See *Secure Management using Web Based Management (web browser)* on page 145.
- Disable the Telnet, FTP and TFTP protocols. Accessing the machine using these protocols is not secure. For how to configure the protocol settings, see *How to configure the machine settings using Web Based Management (web browser)* on page 127.
- If you use BRAdmin Professional 3 and Web Based Management (web browser) together, use Web Based Management with the HTTPS protocol. See *Secure Management using Web Based Management (web browser)* on page 145.
- If you are managing a mixed group of older print servers [2] and the new print servers with BRAdmin Professional 3, we recommend using a different password in each group. This will ensure security is maintained on the new print servers.

[1] BRAdmin Professional older than Ver. 2.80, Web BRAdmin older than Ver. 1.40, BRAdmin Light for Macintosh older than Ver. 1.10

[2] NC-2000 series, NC-2100p, NC-3100h, NC-3100s, NC-4100h, NC-5100h, NC-5200h, NC-6100h, NC-6200h, NC-6300h, NC-6400h, NC-8000, NC-100h, NC-110h, NC-120w, NC-130h, NC-140w, NC-8100h, NC-9100h, NC-7100w, NC-7200w, NC-2200w

Printing documents securely using IPPS

To print documents securely over the internet, you can use the IPPS protocol.

Note

- Communication using IPPS cannot prevent unauthorized access to the print server.
- IPPS is available for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008.

To use the IPPS protocol, the following printer settings are required.

- A certificate and private key must be installed in the printer. For how to install certificate and private key, see *Creating and installing a certificate* on page 152.
- The IPPS protocol must be enabled. To enable the IPPS protocol, enable **SSL communication is used (port 443)** from the **Advanced Setting** page of **IPP** on the **Configure Protocol** page. For information on how to access the **Configure Protocol** page, see *Configuring the protocol settings* on page 144.

The basic steps for IPPS printing are the same as IPP printing. For detailed information, see *Internet printing for Windows®* in Chapter 12.

Specifying a different URL

Please note that there are several possible entries that you can enter for the URL field.

`https://Common Name/ipp`

This is the default URL and we recommend that you use this URL.

`https://Common Name/ipp/port1`

This is for HP Jetdirect compatibility.

`https://Common Name/`

Note

If you forget the URL details, you can simply enter the above text (`https://Common Name/`) and the printer will still receive and process data.

Where "`Common Name`" is the Common Name that you assigned for the certificate, such as an IP address. For how to assign a Common Name for the certificate, see *Creating and installing a certificate* on page 152.

- For example:

  `https://192.168.1.2/` (if the Common Name is the printer's IP address.)

Using E-mail notification with user authentication

To use the E-mail notification function via secure SMTP server that requires a user authentication, you need to use POP before SMTP or SMTP-AUTH method. These methods prevent an unauthorized user from accessing the mail server. You can use Web Based Management (web browser), BRAdmin Professional 3 and Web BRAdmin to configure these settings.

Note

You need to match the settings of POP3/SMTP authentication with one of the E-mail servers. Contact your network administrator or your internet service provider about the configuration before using.

How to configure the POP3/SMTP settings using Web Based Management (web browser).

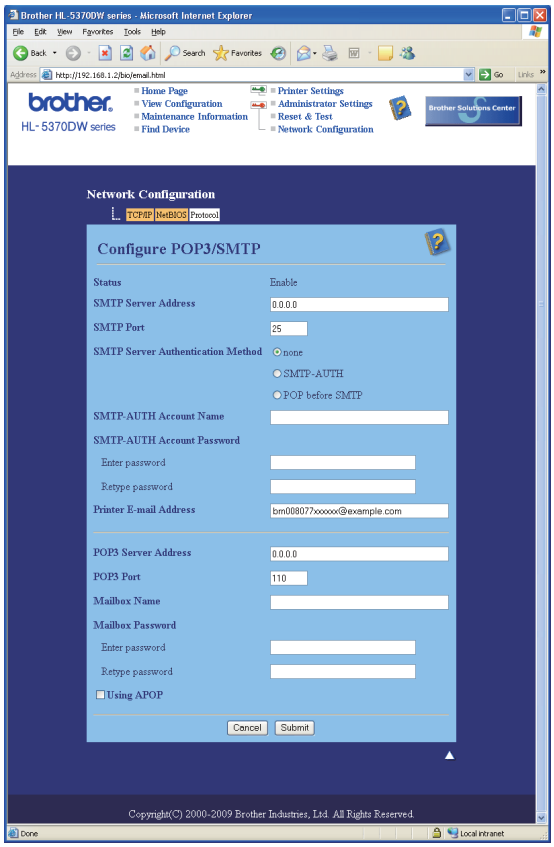
1. Start your web browser.
2. Type “`http://printer's IP address/`” into your browser (where “`printer's IP address`” is the printer's IP address).
   - For example:
     `http://192.168.1.2/`

Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx” for a wired network or ”BRWxxxxxxxxxxx” for a wireless network.

3. Click **Network Configuration**.
4. Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".
5. Click **Configure Protocol**.
6. Make sure that the **POP3/SMTP** setting is enable, and then click **Advanced Setting** of **POP3/SMTP**.

7 You can configure the **POP3/SMTP** settings on this page.



Note

- You can also change the SMTP port number using Web Based Management. This is useful if your ISP (Internet Service Provider) implements the “Outbound Port 25 Blocking (OP25B)” service. By changing the SMTP port number to a specific number which your ISP is using for the SMTP server (for example, port 587), you would then be able to send an E-mail via the SMTP server. You will also need to check **SMTP-AUTH** of **SMTP Server Authentication Method** to enable the SMTP server authentication.
- If you can use both POP before SMTP and SMTP-AUTH, we recommend choosing SMTP-AUTH.
- If you choose POP before SMTP for the SMTP Server Authentication Method, you need to configure the POP3 settings. You can also use the APOP method.
- For more information, see the Help text in the Web Based Management.
- You can also confirm whether the E-mail settings are correct after configuration by sending a test E-mail.

8 After configuring, click **Submit**. The Test E-mail Send/Receive Configuration dialog appears.

9 Follow the instructions on-screen if you want to test with the current settings.

Creating and installing a certificate

The Brother print server allows you to use SSL/TLS communication by configuring a certificate and corresponding private key. This print server supports two certification methods. A self-signed certificate and a certificate that is issued by a CA (Certificate Authority).

■ Using self-signed certificate

This print server issues its own certificate. Using this certificate, you can easily use the SSL/TLS communication without having a certificate from a CA. See *Creating and installing a self-signed certificate* on page 154.

■ Using a certificate from a CA

There are two methods for installing a certificate from a CA. If you already have a CA or if you want to use a certificate from an outside trusted CA:

- When using a CSR (Certificate Signing Request) from this print server. See *Creating CSR and installing a certificate* on page 167.
- When importing a certificate and a private key. See *Import and export the certificate and private key* on page 168.

Note

- If you are going to use SSL/TLS communication, we recommend that you contact your system administrator before using.
- This print server stores only one pair of a certificate and a private key that you installed or previously imported. This printer overwrites the certificate and the private key if you install a new one.
- When you reset the print server back to its factory default settings, the certificate and the private key that are installed will be deleted. If you want to keep the same certificate and the private key after resetting the print server, export them before resetting and re-install them. See *How to export the certificate and private key* on page 168.

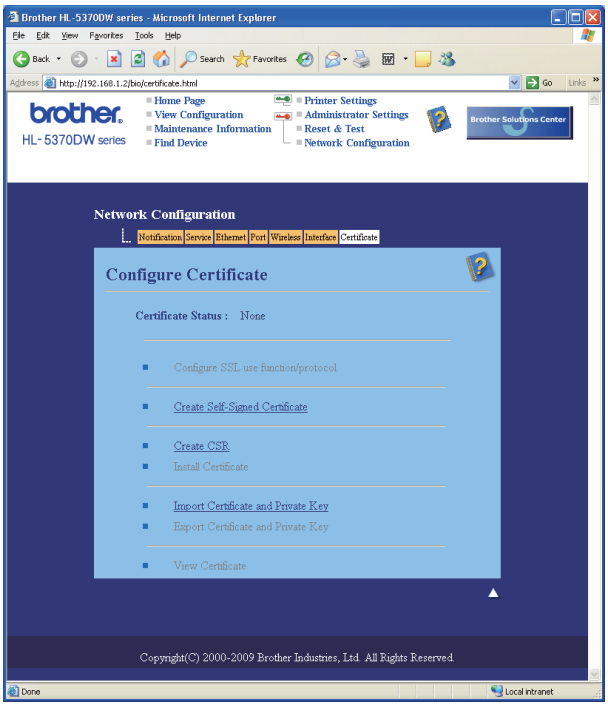
This feature can be configured using Web Based Management (web browser) only. Follow these steps to access the configure certificate page using Web Based Management.

1. Start your web browser.
2. Type “`http://printer's IP address/`” into your browser. (where “`printer's IP address`” is the printer's IP address.)
   ■ For example:
   `http://192.168.1.2/`

Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx” for a wired network or “BRWxxxxxxxxxxx” for a wireless network.

3. Click **Network Configuration**.
4. Enter a user name and a password. The default User Name is “**admin**” and the default Password is “**access**”.
5. Click **OK**.
6. Click **Configure Certificate**.
7. You can configure the certificate settings from the screen below.



Note

- The functions that are grayed and unlinked indicate they are not available.
- For more information on configuration, see the Help text in the Web Based Management.

Creating and installing a self-signed certificate

How to create and install a self-signed certificate

1. Click **Create Self-Signed Certificate** on the **Configure Certificate** page.
2. Enter a **Common Name** and a **Valid Date**, then click **Submit**.

Note

- The length of the **Common Name** is less than 64 bytes. Enter an identifier such as an IP address, node name or domain name to use when accessing this printer through SSL/TLS communication. The node name is displayed by default.
- A warning will pop-up if you use the IPPS or HTTPS protocol and enter a different name in the URL than the **Common Name** that was used for the self-signed certificate.

3. Now the self-signed certificate is created successfully.
4. Follow the on-screen instructions to configure the other security settings.
5. Restart the printer to activate the configuration.
6. Now the self-signed certificate is saved in your printer memory. To use SSL/TLS communication, the self-signed certificate also needs to be installed on your computer. Proceed to the next section.

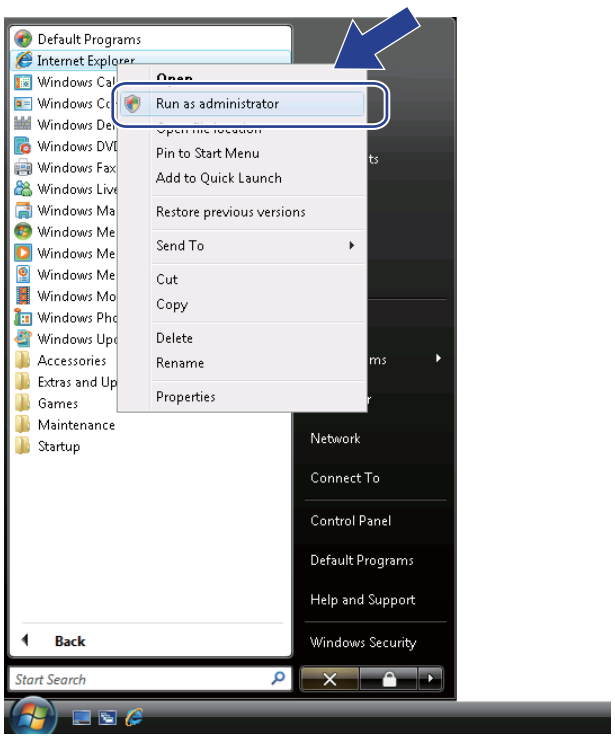
How to install the self-signed certificate on your computer

Note

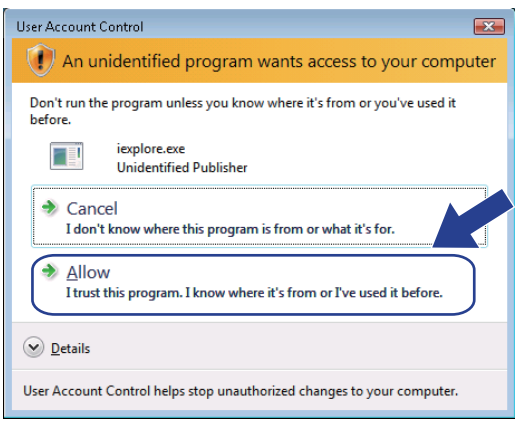
The following steps are for Microsoft® Internet Explorer® 6.0. If you use another web browser, follow the help text of the web browser itself.

For Windows Vista® users that have administrator rights

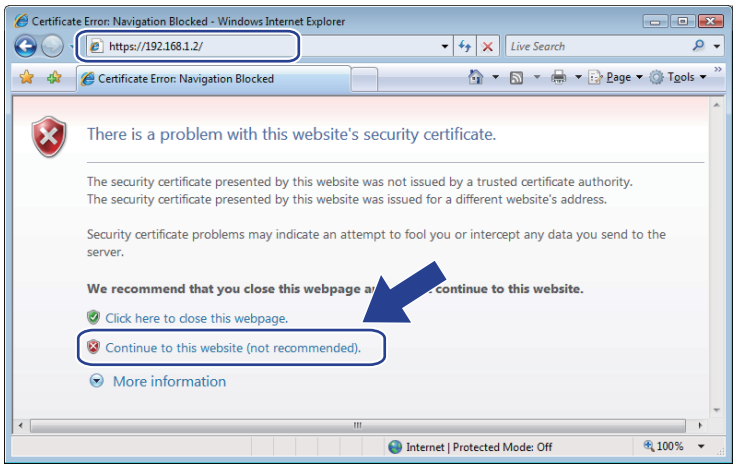
1. Click the button and **All Programs**.
2. Right-click **Internet Explorer**, and then click **Run as administrator**.



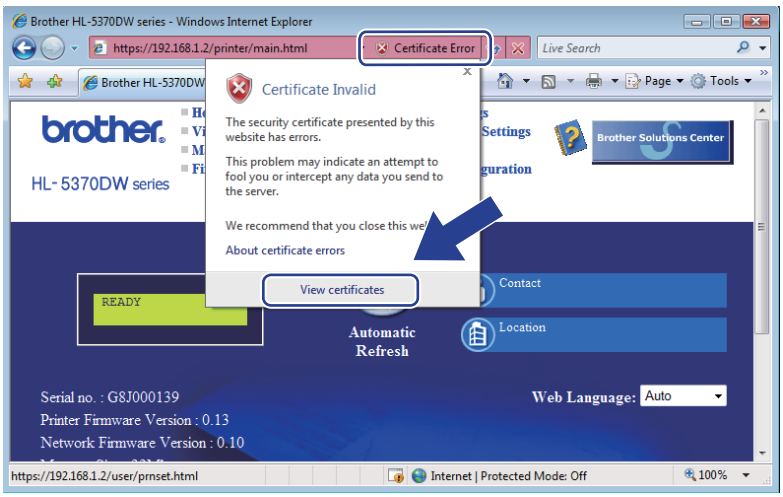
3. Click **Allow**.



4 Type “`https://printer's IP address/`” into your browser to access your printer (where “`printer's IP address`” is the printer's IP address or the node name).
Then, click **Continue to this website (not recommended)**.

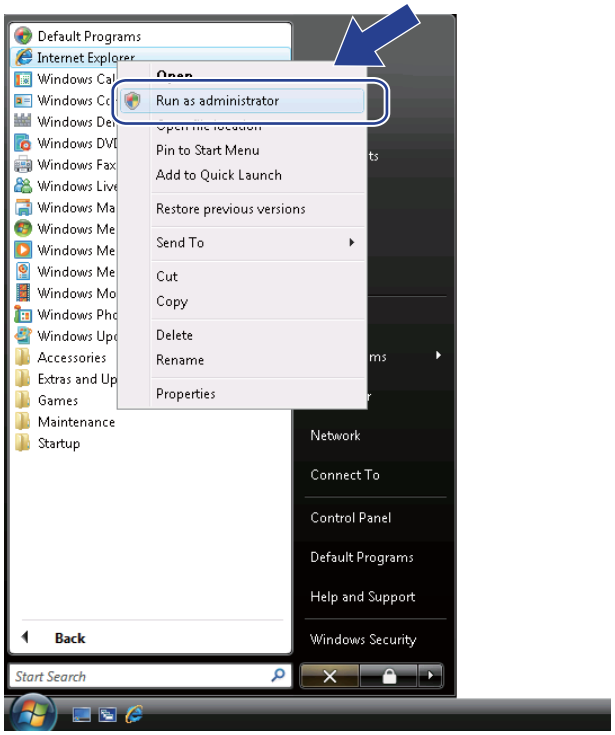


5 Click **Certificate Error**, and then click **View certificates**. For the rest of the instructions, follow the steps from ❹ on page 163.

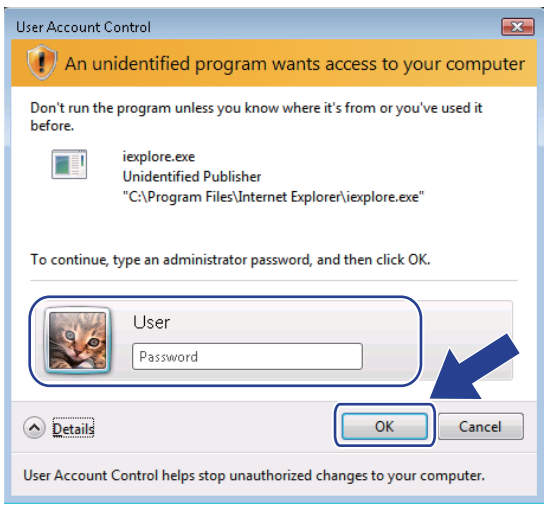


For Windows Vista® users that do not have administrator rights

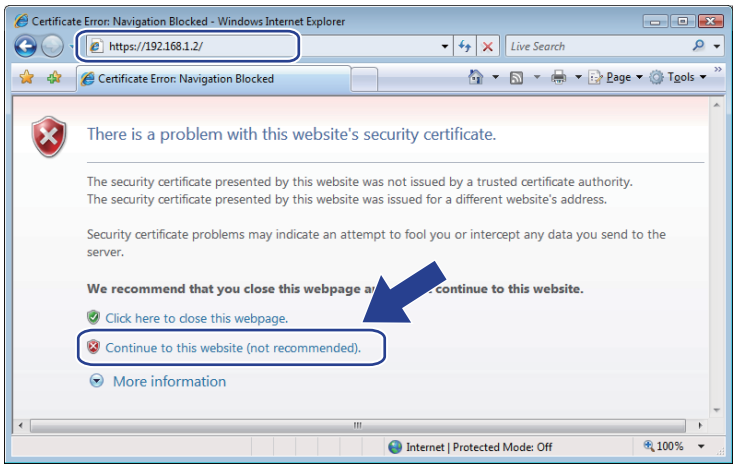
1. Click the button and **All Programs**.
2. Right-click **Internet Explorer**, and then click **Run as administrator**.



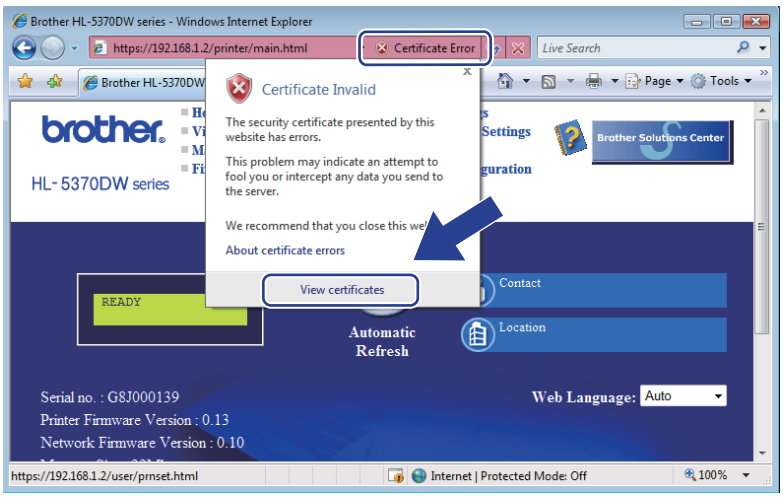
3. Choose the Administrator that you want to install with and enter the administrator password, and then click **OK**.



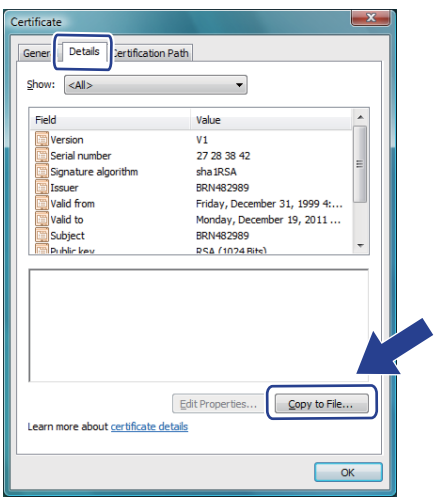
4 Type “`https://printer's IP address/`” into your browser to access your printer (where “`printer's IP address`” is the printer's IP address or the node name).
Then, click **Continue to this website (not recommended)**.



5 Click **Certificate Error**, and then click **View certificates**.



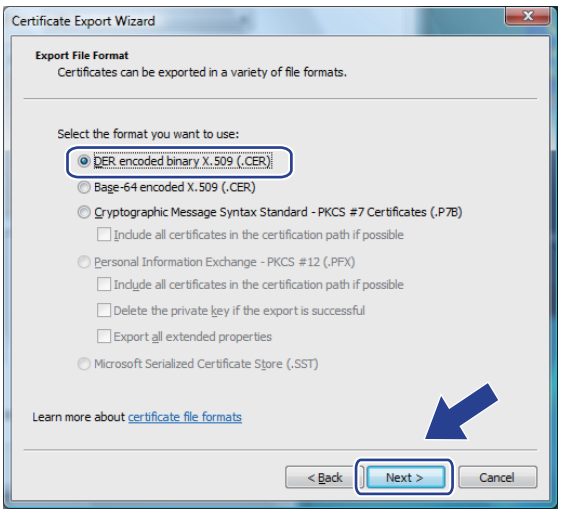
6 Choose the **Details** tab, and then click **Copy to File...**.



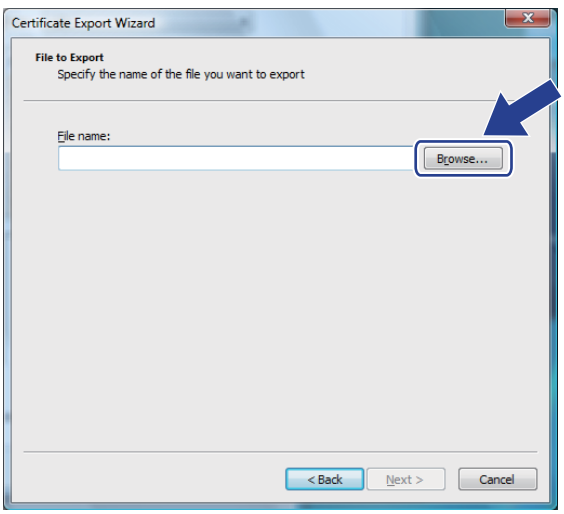
7 Click **Next**.



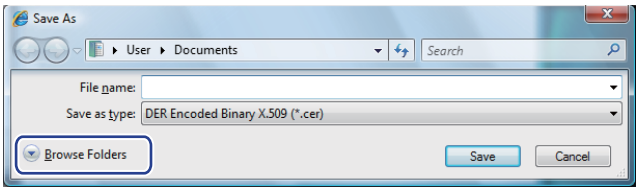
8 Make sure that **DER encoded binary X.509 (.CER)** is chosen, and then click **Next**.



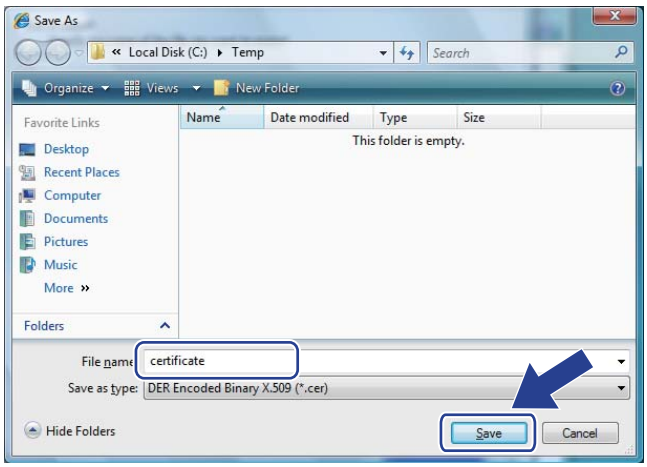
9 Click **Browse...**.



⑩ Click **Browse Folders**.



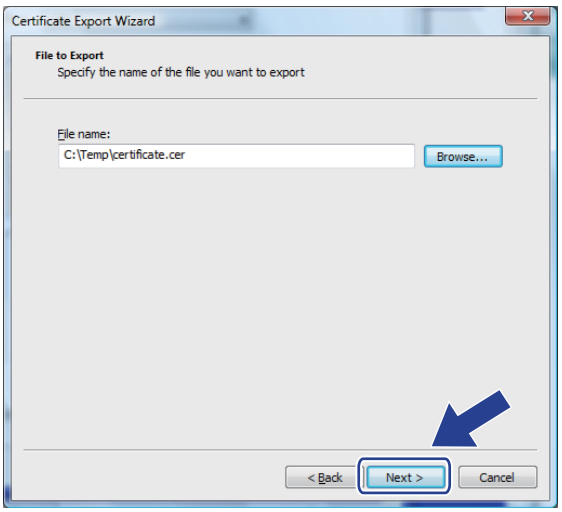
⑪ Choose a folder you want to save the certificate file in and enter a file name, and then click **Save**.



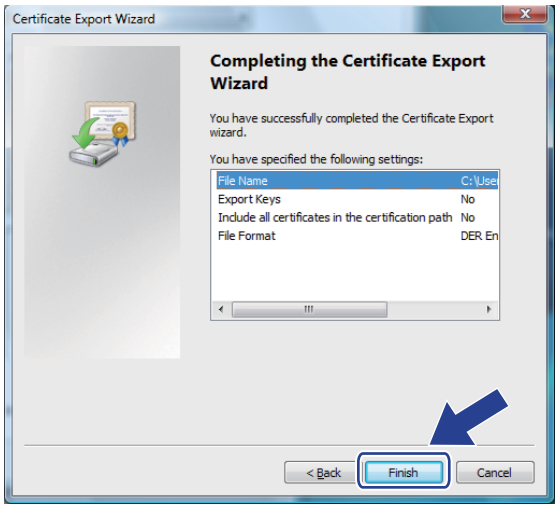
Note

If you choose **Desktop**, the certificate file is saved to the Desktop of the Administrator that you chose.

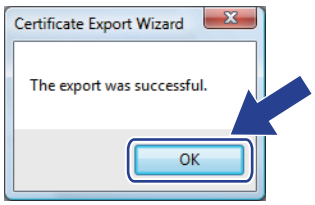
⑫ Click **Next**.



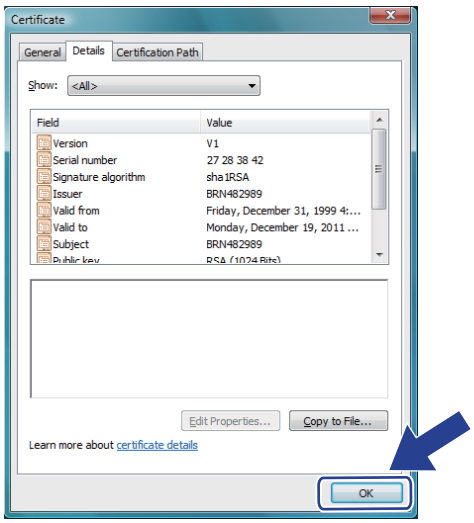
⓭ Click **Finish**.



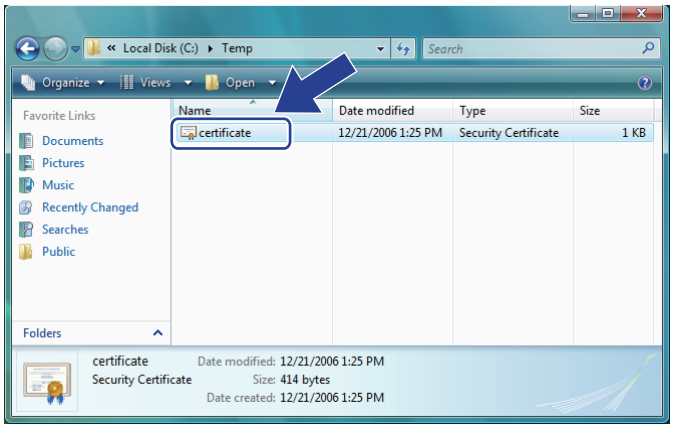
⓮ Click **OK**.



⓯ Click **OK**.



⑯ Open the folder that you saved the certificate file in ⑪ and double-click the certificate file. For the rest of the instructions, follow the steps from ❹ on page 158.

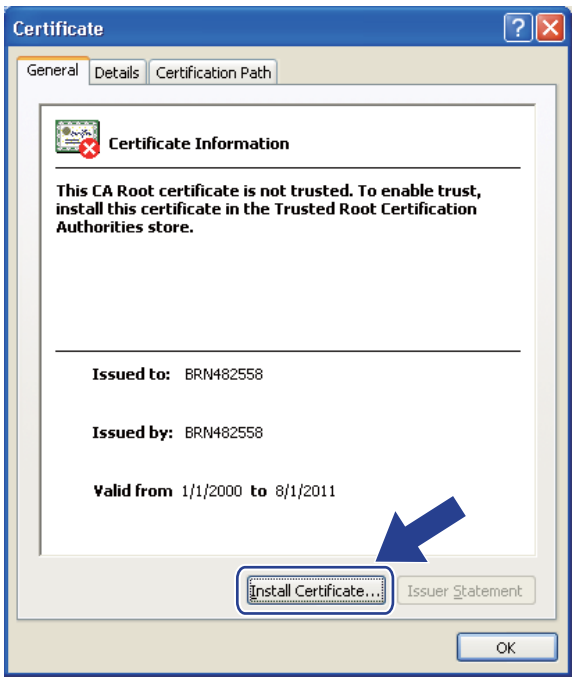


For Windows® 2000/XP and Windows Server® 2003/2008 users

1. Start your web browser.
2. Type "`https://printer's IP address/`" into your browser to access your printer (where "`printer's IP address`" is the IP address or the node name that you assigned for the certificate).
3. When the following dialog appears, click **View Certificate**.



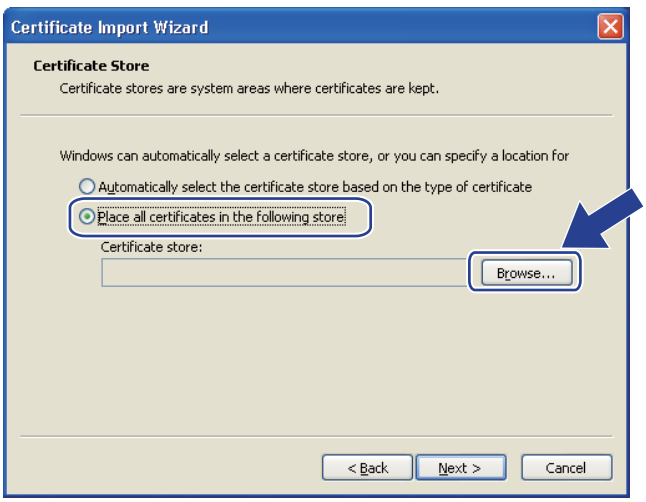
4. Click **Install Certificate…** from the **General** tab.



5 When the **Certificate Import Wizard** appears, click **Next**.



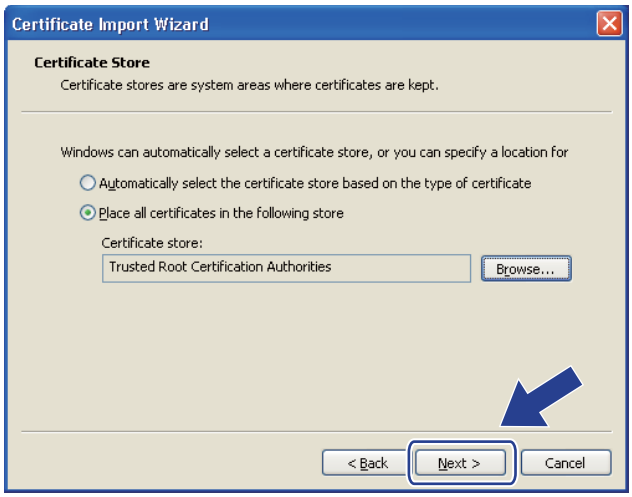
6 Choose **Place all certificates in the following store** and then, click **Browse...**.



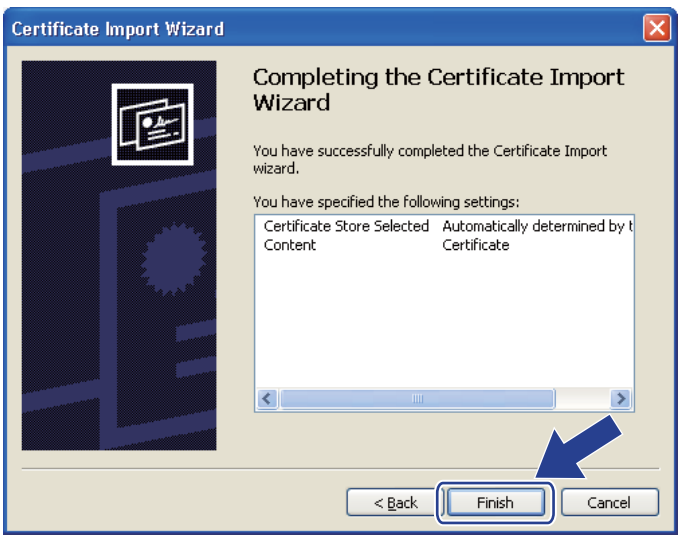
7 Choose **Trusted Root Certification Authorities** and then, click **OK**.



8 Click **Next**.



9 Click **Finish**.



10 Click **Yes**, if the fingerprint (thumbprint) is correct.



Note

The fingerprint (thumbprint) is printed on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117.

⓫ Click **OK**.



⓬ Now the self-signed certificate is installed on your computer, and the SSL/TLS communication is available.

Creating CSR and installing a certificate

How to create the CSR

1. Click **Create CSR** on the **Configure Certificate** page.
2. Enter a **Common Name** and your information, such as **Organization**. Then click **Submit**.

Note

- We recommend that the Root Certificate from the CA be installed on your computer before creating the CSR.
- The length of the **Common Name** is less than 64 bytes. Enter an identifier such as an IP address, node name or domain name to use when accessing this printer through SSL/TLS communication. The node name is displayed by default. The **Common Name** is required.
- A warning will pop-up if you enter a different name in the URL than the **Common Name** that was used for the certificate.
- The length of the **Organization**, the **Organization Unit**, the **City/Locality** and the **State/Province** is less than 64 bytes.
- The **Country/Region** should be an ISO 3166 country code composed of two characters.

3. When the contents of the CSR appear, click **Save** to save the CSR file to your computer.
4. Now the CSR is created.

Note

- Follow your CA policy regarding the method to send a CSR to your CA.
- If you are using **Enterprise root CA** of Windows Server® 2003/2008, we recommend using the **Web Server** of the **CertificateTemplate** when creating the certificate. For more information, visit us at http://solutions.brother.com/.

How to install the certificate to your printer

When you receive the certificate from a CA, follow the steps below to install it into the print server.

Note

Only a certificate issued with this printer's CSR can be installed.

1. Click **Install Certificate** on the **Configure Certificate** page.
2. Specify the file of the certificate that has been issued by a CA, and then click **Submit**.
3. Now the certificate is created successfully.
4. Follow the on-screen instructions to configure the other security settings.
5. Restart the printer to activate the configuration.

6. Now the certificate is saved in your printer. To use SSL/TLS communication, the Root Certificate from the CA needs to be installed on your computer. Contact your network administrator about installation.

Import and export the certificate and private key

How to import the certificate and private key

1. Click **Import Certificate and Private Key** on the **Configure Certificate** page.
2. Specify the file that you want to import.
3. Enter the password if the file is encrypted, and then click **Submit**.
4. Now the certificate and private key are imported successfully.
5. Follow the on-screen instructions to configure the other security settings.
6. Restart the printer to activate the configuration.
7. Now the certificate and private key are imported to your printer. To use SSL/TLS communication, the Root Certificate from the CA needs to also be installed on your computer. Contact your network administrator about the installation.

How to export the certificate and private key

1. Click **Export Certificate and Private Key** on the **Configure Certificate** page.
2. Enter the password if you want to encrypt the file.

Note

If a blank password is used, the output is not encrypted.

3. Enter the password again for confirmation, and then click **Submit**.
4. Specify the location where you want to save the file.
5. Now the certificate and private key are exported to your computer.

Note

You can import the file that you exported.

15 Troubleshooting

Overview

This chapter explains how to resolve typical network problems you may encounter when using the machine. If, after reading this chapter, you are unable to resolve your problem, please visit the Brother Solutions Center at: http://solutions.brother.com/

This chapter is divided into the following sections:

- General problems
- Network print software installation problems
- Printing problems
- Protocol-specific troubleshooting
- Wireless network specific troubleshooting (For HL-5370DW)

General problems

CD-ROM is inserted, but does not start automatically.

If your computer does not support Autorun, the menu will not start automatically after inserting the CD-ROM. In this case, execute **start.exe** in the root directory of the CD-ROM.

How to reset the Brother print server back to the factory default

You can reset the print server back to its factory default settings (resetting all information such as the password and IP address information). (See *Reset the network settings to the factory default* on page 118.)

My computer cannot find the machine/print server.
I cannot make a necessary connection to the machine/print server.
My machine/print server does not appear in the window of Remote Setup, BRAdmin Light or BRAdmin Professional 3.

- For Windows®

  The firewall on your computer may be rejecting the necessary network connection to the machine. In this case, you will need to disable the Firewall on your computer and re-install the drivers.

  Windows Vista® users:

  1) Click the  button, **Control Panel**, **Network and Internet**, **Windows Firewall** and click **Change settings**.
  2) When the **User Account Control** screen appears, do the following.
     - Users who have administrator rights: Click **Continue**.
     - For users who do not have administrator rights: Enter the administrator password and click **OK**.
  3) Click the **General** tab. Make sure that **Off (not recommended)** is selected.

4) Click **OK**.

Note

After the Brother software package is installed, turn your Firewall back on.

Windows® XP SP2 / SP3 users:

1) Click the **Start** button, **Control Panel**, **Network and Internet Connections**.
2) Double-click **Windows Firewall**.
3) Click the **General** tab. Make sure that **Off (not recommended)** is selected.
4) Click **OK**.

Note

After the Brother software package is installed, turn your Firewall back on.

Network print software installation problems

The Brother print server is not found during setup of the network print software installation or from the printer driver of the Brother machine in Windows®. The Brother print server is not found using the Simple Network Configuration capabilities of Mac OS X.

- For a network with an Ethernet cable connection

  Make sure you have completed the IP address setting of the Brother print server according to Chapter 2 of this User's Guide before installing the network print software or printer driver.

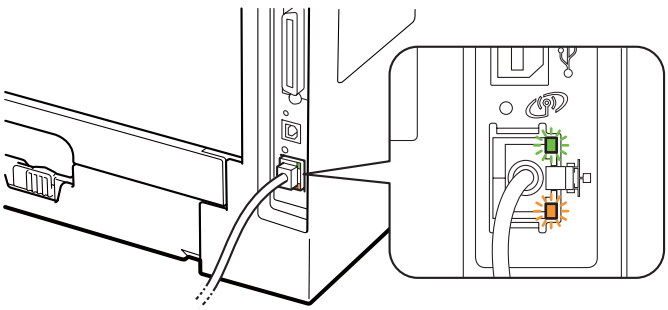
- For a wireless network

  Make sure you have completed the IP address setting and wireless network settings of the Brother print server according to Chapter 3 of this User's Guide before installing the network print software or printer driver.

Check the following:

1. Make sure that the machine is powered on, is on-line and ready to print.

2. Check the connection status for your network.
   For wired network users:
   Check to see if there is any LED activity. Brother print server has two LEDs on the back panel of the machine. The upper green LED shows Link/Activity (Received/Transmit) status. The lower orange LED shows Speed status.



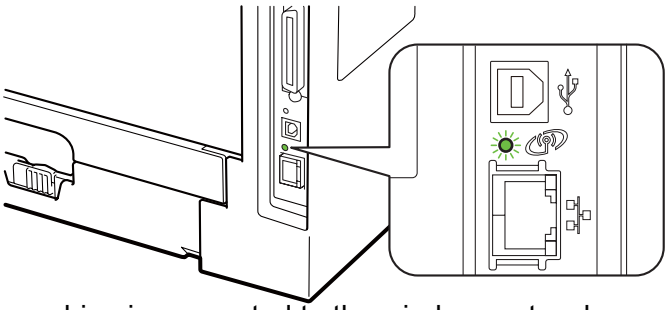
- The upper LED is green: The Link/Activity LED will be green if the print server is connected to a Ethernet network.
- The upper LED is off: The Link/Activity LED will be off if the print server is not connected to the network.
- The lower LED is orange: The Speed LED will be orange if the print server is connected to a 100BASE-TX Fast Ethernet network.
- The lower LED is off: The Speed LED will be off if the print server is connected to a 10BASE-T Ethernet network.

For wireless network users (For HL-5370DW):

Note

Make sure that the label covering the USB interface connector is removed.

Check to see if there is any LED activity. Brother print server has a green LED on the back panel of the machine, which shows the wireless network status.



- The LED is on: Your machine is connected to the wireless network.

Note

The LED is on in the following status even if your machine is not connected to the wireless network:

- The wireless network is active with Ad-hoc mode.
- Your machine is connected to the access point with Open System authentication.

- The LED is blinking (turn on for 0.5 second and off for 0.5 second): The wireless network connection is in either of the following status: "not yet connected", "connecting" or "connection failed" in Infrastructure mode.
- The LED is off: The wireless network setting is inactive. For information on switching the wireless network to enable, see *Enabling or disabling the wireless network (For HL-5370DW)* on page 119.

3 Print the Printer Settings Page and check if the settings such as IP address settings are correct for your network. The problem may be the result of a mismatched or duplicate IP address. Verify that the IP address is correctly loaded into the print server. And make sure that no other nodes on the network have this IP address. For information on how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117.

4 Verify that the print server is on your network as follows:

For Windows®

1 Click **Start**, **All Programs** [1], **Accessories** then choose **Command Prompt**.

[1] **Programs** for Windows® 2000 users

2 Try pinging the print server from the host operating system command prompt with the command:
`ping ipaddress`
Where `ipaddress` is the print server IP address (note that in some instances it can take up to two minutes for the print server to load its IP address after setting the IP address).

For Mac OS X 10.3.9 or greater

1 From the **Go** menu, choose **Applications**.
2 Open the **Utilities** folder.

3 Double-click the **Terminal** icon.
4 Try pinging the print server from the Terminal window:
`ping ipaddress`
Where `ipaddress` is the print server IP address (note that in some instances it can take up to two minutes for the print server to load its IP address after setting the IP address).

5 If you have tried ❶ to ❹ above and it does not work, then reset the print server back to its factory default settings and try from the initial setup again. For resetting, see *Reset the network settings to the factory default* on page 118.

6 If the installation failed, the Firewall on your computer may be blocking the necessary network connection to the machine. In this case, you will need to disable the Firewall on your computer and re-install the drivers. For more information, see *General problems* on page 169. If you are using personal Firewall software, see the *User's Guide* for your software or contact the software manufacturer.

Printing problems

Print job is not printed.

Check the status and configuration of the print server.

1. Make sure that the machine is powered on, is on-line and ready to print.

2. Print the Printer Settings Page of the machine and check if the settings such as IP address settings are correct for your network. The problem may be the result of mismatched or duplicate IP address. Verify that the IP address is correctly loaded into the print server, and make sure that no other nodes on the network have this IP address. For information on how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 117.

3. Verify that the print server is on your network as follows:

   ■ **For Windows®**

   1 Click **Start**, **All Programs** [1], **Accessories** then choose **Command Prompt**.

   [1] **Programs** for Windows® 2000 users

   2 Try pinging the print server from the host operating system command prompt with the command:
   `ping ipaddress`
   Where `ipaddress` is the print server IP address (note that in some instances it can take up to two minutes for the print server to load its IP address after setting the IP address).

   3 If a successful response is received, then proceed to *Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 IPP troubleshooting* on page 175. Otherwise, proceed to ❹.

   ■ **For Mac OS X 10.3.9 or greater**

   1 From the **Go** menu, choose **Applications**.
   2 Open the **Utilities** folder.
   3 Double-click the **Terminal** icon.
   4 Try pinging the print server from the Terminal window:
   `ping ipaddress`
   Where `ipaddress` is the print server IP address (note that in some instances it can take up to two minutes for the print server to load its IP address after setting the IP address).
   5 If a successful response is received, then proceed to ❹.

4. If you have tried ❶ to ❸ above and it does not work, then reset the print server back to its factory default settings and try from the initial setup again. For resetting, see *Reset the network settings to the factory default* on page 118.

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Error during printing

If you try to print while other users are printing large amounts of data (e.g. many pages or color pages with high resolution), the machine is unable to accept your print job until the ongoing printing is finished. If the waiting time of your print job exceeds a certain limit, a time out situation occurs, which causes the error message. In such situations, execute the print job again after the other jobs are completed.

Protocol-specific troubleshooting

Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 IPP troubleshooting

I want to use a different Port number other than 631.

If you are using Port 631 for IPP printing, you may find that your firewall may not let the print data through. If this is the case, use a different port number (port 80), or configure your Firewall to allow Port 631 data through.

To send a print job using IPP to a printer using Port 80 (the standard HTTP port) enter the following when configuring your Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 system.

`http://ipaddress/ipp`

The "Go to printer's website" option in Windows® XP and Windows Vista® is not working. The "Get More Info" option in Windows® 2000 and Windows Server® 2003/2008 is not working.

If you are using a URL of:

`http://ipaddress:631 or http://ipaddress:631/ipp`,

the **Get More Info** option in Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 will not function. if you wish to use the **Get More Info** option, use the following URL:

`http://ipaddress`

This will then force Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 to use Port 80 to communicate with the Brother print server.

Web Based Management (web browser) troubleshooting (TCP/IP)

1. If you cannot connect to the print server using your web browser it may be worth checking the Proxy Settings of your browser. Look in the Exceptions setting and if necessary, type in the IP address of the print server. This will stop your computer from trying to connect to your ISP or proxy server every time you wish to look at the print server.
2. Make sure that you are using the proper web browser, we recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1.

Wireless network troubleshooting (For HL-5370DW)

Note

If you want to confirm the wireless network status, see *For wireless network users (For HL-5370DW):* on page 172.

Wireless setup problems

The Brother print server is not found during setup by the Wireless Device Setup Wizard.

1. Make sure that the machine is powered on, is on-line and ready to print.
2. Move your Brother machine closer to your access point/router (or your computer for Ad-hoc) and try again.
3. Reset the print server back to its factory default settings and try the wireless setup again (see *Reset the network settings to the factory default* on page 118).

Why do I have to change my machine's network setting to "Wired LAN" during setup although I am trying to setup Wireless LAN?

If you are using Windows® 2000 / Mac OS X 10.3.9 or greater, your computer is connected to the wireless network using a network cable, it is recommended you temporarily connect the machine to your access point/router, hub or router using a network cable. You will also need to change your machine's network setting to wired LAN temporarily. Your machine's network setting will be changed to wireless LAN automatically during the course of the setup.

- For Windows®:

  Configuration in Infrastructure mode on page 29

  Configuration using the automatic wireless (one-push) method on page 40

  Configuration in Ad-hoc mode on page 46

- For Macintosh:

  Configuration in Infrastructure mode on page 61

  Configuration using the automatic wireless (one-push) method on page 71

  Configuration in Ad-hoc mode on page 77

Wireless connection problem

The wireless network connection is sometimes disabled.

The wireless network connection status is affected by the environment where the Brother printer and other wireless devices are located. The following conditions may cause connection problems:

- A concrete or metal framed wall is installed between the Brother machine and the access point/router.
- Electric appliances such as televisions, computer appliances, microwave ovens, intercoms, mobile/cellular phones and the battery chargers and AC power adapters are installed close to your network.
- A broadcast station or high-tension wire is located close to your network.
- A nearby fluorescent light is being switching on or off.

A Appendix

Using services

A service is a resource that can be accessed by computers that wish to print to the Brother print server. The Brother print server provides the following predefined services (do a SHOW SERVICE command in the Brother print server remote console to see a list of available services): Enter `HELP` at the command prompt for a list of supported commands.

Service (Example)	Definition
BINARY_P1	TCP/IP binary
TEXT_P1	TCP/IP text service (adds carriage return after each line feed)
PCL_P1	PCL service (switches PJL-compatible printer to PCL mode)
BRNxxxxxxxxxxxx	TCP/IP binary
BRNxxxxxxxxxxxx_AT	PostScript® service for Macintosh
POSTSCRIPT_P1	PostScript® service (switches PJL-compatible printer to PostScript® mode)

Where "xxxxxxxxxxxx" is your machine's MAC Address (Ethernet Address).

Other ways to set the IP address (For advanced users and administrators)

For information on how to configure your machine for a network using the BRAdmin Light utility or Web Based Management (web browser), see *Setting the IP address and subnet mask* on page 13.

Using DHCP to configure the IP address

The Dynamic Host Configuration Protocol (DHCP) is one of several automated mechanisms for IP address allocation. If you have a DHCP server in your network, the print server will automatically obtain its IP address from DHCP server and register its name with any RFC 1001 and 1002-compliant dynamic name services.

Note

If you do not want your print server configured via DHCP, BOOTP or RARP, you must set the Boot Method to static so that the print server has a static IP address. This will prevent the print server from trying to obtain an IP address from any of these systems. To change the Boot Method, use the machine's control panel `NETWORK` menu (for HL-5380DN), BRAdmin applications or Web Based Management (web browser) .

Using BOOTP to configure the IP address

BOOTP is an alternative to rarp that has the advantage of allowing configuration of the subnet mask and gateway. In order to use BOOTP to configure the IP address make sure that BOOTP is installed and running on your host computer (it should appear in the `/etc/services` file on your host as a real service; type `manbootpd` or refer to your system documentation for information). BOOTP is usually started up via the `/etc/inetd.conf` file, so you may need to enable it by removing the "#" in front of the bootp entry in that file. For example, a typical bootp entry in the /etc/inetd.conf file would be:

```
#bootp dgram udp wait /usr/etc/bootpd bootpd -i
```

Depending on the system, this entry might be called "bootps" instead of "bootp".

Note

In order to enable BOOTP, simply use an editor to delete the "#" (if there is no "#", then BOOTP is already enabled). Then edit the BOOTP configuration file (usually `/etc/bootptab`) and enter the name, network type (1 for Ethernet), MAC Address (Ethernet Address) and the IP address, subnet mask and gateway of the print server. Unfortunately, the exact format for doing this is not standardized, so you will need to refer to your system documentation to determine how to enter this information (many UNIX systems also have template examples in the bootptab file that you can use for reference). Some examples of typical `/etc/bootptab` entries include: ("BRN" below is "BRW" for a wireless network.)

```
BRN008077310107 1 00:80:77:31:01:07 192.189.207.3
```

and:

```
BRN008077310107:ht=ethernet:ha=008077310107:\ip=192.189.207.3:
```

Certain BOOTP host software implementations will not respond to BOOTP requests if you have not included a download filename in the configuration file. If this is the case, simply create a null file on the host and specify the name of this file and its path in the configuration file.

As with RARP, the print server will load its IP address from the BOOTP server when the printer is powered on.

Using RARP to configure the IP address

The Brother print server's IP address can be configured using the Reverse ARP (RARP) facility on your host computer. This is done by editing the `/etc/ethers` file (if this file does not exist, you can create it) with an entry similar to the following:

`00:80:77:31:01:07 BRN008077310107` (or `BRW008077310107` for a wireless network)

Where the first entry is the MAC Address (Ethernet Address) of the print server and the second entry is the name of the print server (the name must be the same as the one you put in the `/etc/hosts` file).

If the RARP daemon is not already running, start it (depending on the system the command can be `rarpd`, `rarpd -a`, `in.rarpd -a` or something else; type `man rarpd` or refer to your system documentation for additional information). To verify that the RARP daemon is running on a Berkeley UNIX based system, type the following command:

```
ps -ax | grep -v grep | grep rarpd
```

For AT&T UNIX-based systems, type:

```
ps -ef | grep -v grep | grep rarpd
```

The Brother print server will get the IP address from the RARP daemon when the printer is powered on.

Using APIPA to configure the IP address

The Brother print server supports the Automatic Private IP Addressing (APIPA) protocol. With APIPA, DHCP clients automatically configure an IP address and subnet mask when a DHCP server is not available. The device chooses it's own IP address in the range 169.254.1.0 through to 169.254.254.255. The subnet mask is automatically set to 255.255.0.0 and the gateway address is set to 0.0.0.0.

By default, the APIPA protocol is enabled. If you want to disable the APIPA protocol, see *Changing the print server settings* on page 16.

If the APIPA protocol is disabled, the default IP address of a Brother print server is 192.0.0.192. However, you can easily change this IP address number to match with the IP address details of your network.

Using ARP to configure the IP address

If you are unable to use the BRAdmin application and your network does not use a DHCP server, you can also use the ARP command. The ARP command is available on Windows® systems that have TCP/IP installed as well as UNIX systems. To use arp enter the following command at the command prompt:

```
arp -s ipaddress ethernetaddress
```

Where `ethernetaddress` is the MAC Address (Ethernet Address) of the print server and `ipaddress` is the IP address of the print server. For example:

■ **Windows® systems**

Windows® systems require the dash “-” character between each digit of the MAC Address (Ethernet Address).

```
arp -s 192.168.1.2 00-80-77-31-01-07
```

■ **UNIX/Linux systems**

Typically, UNIX and Linux systems require the colon “:” character between each digit of the MAC Address (Ethernet Address).

```
arp -s 192.168.1.2 00:80:77:31:01:07
```

Note

You must be on the same Ethernet segment (that is, there cannot be a router between the print server and operating system) to use the arp -s command.

If there is a router, you may use BOOTP or other methods described in this chapter to enter the IP address. If your Administrator has configured the system to deliver IP addresses using BOOTP, DHCP or RARP your Brother print server can receive an IP address from any one of these IP address allocation systems. In which case, you will not need to use the ARP command. The ARP command only works once. For security reasons, once you have successfully configured the IP address of a Brother print server using the ARP command, you cannot use the ARP command again to change the address. The print server will ignore any attempts to do this. If you wish to change the IP address again, use Web Based Management (web browser), TELNET (using the SET IP ADDRESS command) or factory reset the print server (which will then allow you to use the ARP command again).

To configure the print server and to verify the connection, enter the following command `ping ipaddress` where `ipaddress` is the IP address of the print server. For example, `ping 192.189.207.2`.

Using the TELNET console to configure the IP address

You can also use the TELNET command to change the IP address.

TELNET is an effective method to change the machine's IP address. But a valid IP address must already be programmed into the print server.

Type `TELNET ipaddress` at the command prompt of the system prompt, where `ipaddress` is the IP address of the print server. When you are connected, push the Return or Enter key to get the "#" prompt. Enter the password "**access**" (the password will not appear on the screen).

You will be prompted for a user name. Enter anything in response to this prompt.

You will then get the `Local>` prompt. Type `SET IP ADDRESS ipaddress`, where `ipaddress` is the desired IP address you wish to assign to the print server (check with your network administrator for the IP address to use). For example:

```
Local> SET IP ADDRESS 192.168.1.3
```

You will now need to set the subnet mask by typing `SET IP SUBNET subnet mask`, where `subnet mask` is the desired subnet mask you wish to assign to the print server (check with your network administrator for the subnet mask to use). For example:

```
Local> SET IP SUBNET 255.255.255.0
```

If you do not have any subnets, use one of the following default subnet masks:

255.0.0.0 for class A networks

255.255.0.0 for class B networks

255.255.255.0 for class C networks

The leftmost group of digits in your IP address can identify the type of network you have. The value of this group ranges from 1 through 127 for Class A networks (e.g., 13.27.7.1), 128 through 191 for Class B networks (e.g.,128.10.1.30), and 192 through 255 for Class C networks (e.g., 192.168.1.4).

If you have a gateway (router), enter its address with the command `SET IP ROUTER routeraddress`, where `routeraddress` is the desired IP address of the gateway you wish to assign to the print server. For example:

```
Local> SET IP ROUTER 192.168.1.4
```

Type `SET IP METHOD STATIC` to set the method of IP access configuration to static.

To verify that you have entered the IP information correctly, type `SHOW IP`.

Type `EXIT` or Ctrl-D (i.e., hold down the control key and type "D") to end the remote console session.

Using the Brother Web BRAdmin server software for IIS to configure the IP address

The Web BRAdmin server software is designed to manage all LAN/WAN Brother network connected devices. By installing the Web BRAdmin server software on a computer running IIS [1], administrators with a web browser can connect to the Web BRAdmin server, which then communicates with the device itself. Unlike the BRAdmin Professional 3 utility, which is designed for Windows® systems only, the Web BRAdmin server software can be accessed from any client computer with a web browser that supports Java.

Please note this software is not included on the CD-ROM that was supplied with your Brother product.

Please visit http://solutions.brother.com/ to learn more about this software and to download it.

[1] Internet Information Server 4.0 or Internet Information Services 5.0/5.1/6.0/7.0

Installation when using a Network Print Queue or Share

Note

If you are going to connect to a shared printer on your network, we recommend that you ask your system administrator about the queue or share name for the printer prior to installation.

Installing the driver and choosing the correct printer queue or share name

1. Turn on your computer. (You must be logged on with Administrator rights.)
   Close any applications running before configuration.
2. Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically.
   Choose your printer model and the language.
3. Click **Install Printer Driver** on the menu screen.

Note

Choose the **Install Printer Driver** icon for your region.

4. Click **Network cable users** (even if the machine is connected using wireless).

Note

For Windows Vista®, when the **User Account Control** screen appears, click **Continue**.

5. When the **License Agreement** window appears, click **Yes** if you agree to the License Agreement.
6. Choose **Network Shared Printer**, and then click **Next**.
7. Choose your printer's queue, and then click **OK**.

Note

Contact your administrator if you do not know the location or the name of the printer in the network.

8. Click **Finish**.

Note

- If you want to register your product on-line, check **On-Line Registration**.
- If you do not want to set your printer as Default printer, uncheck **Set as Default Printer**.
- If you want to disable status monitor, uncheck **Enable Status Monitor**.

OK! **Setup is now complete.**

Installation when using Web Services (For Windows Vista® users)

Note

- You must configure the IP address on your machine before you proceed with this section. If you have not configured the IP address, see *Setting the IP address and subnet mask* on page 13 first.
- Verify the host computer and print server are either on the same subnet, or that the router is properly configured to pass data between the two devices.

1. Click the  button, then choose **Network**.
2. The machine's Web Services Name will be shown with the printer icon. Right-click the machine you want to install.

Note

The Web Services Name for the Brother machine is your model name and the MAC Address (Ethernet Address) of your machine (e.g. Brother HL-XXXX [XXXXXXXXXXXX]).

3. Click **Install**.
4. When the **User Account Control** screen appears, do the following.
   - Users who have administrator rights: Click **Continue**.
   - For users who do not have administrator rights: Enter the administrator password and click **OK**.
5. Choose **Locate and install driver software (recommended)**.
6. Insert Brother CD-ROM.
7. Choose Don't search online and then **Browse my computer for driver software (advanced)** on your computer.
8. Choose your CD-ROM drive, and then the **install** \ **your language** \ **PCL** \ **win2kxpvista** [1] folder.

   [1] **win2kxpvista** folder for 32-bit OS users and **winxpx64vista64** folder for 64-bit OS users
9. Click **Next** to begin installation.

B Appendix

Print server specifications

Ethernet wired network

Network node name	NC-6800h	
LAN	You can connect your machine to a network for Network Printing.	
Support for	Windows® 2000 Professional, Windows® XP, Windows® XP Professional x64 Edition, Windows Vista®, Windows Server® 2003, Windows Server® 2003 x64 Edition and Windows Server® 2008	
	Mac OS X 10.3.9 or greater [1]	
Protocols	IPv4:	ARP, RARP, BOOTP, DHCP, APIPA (Auto IP), WINS/NetBIOS name resolution, DNS resolver, mDNS, LLMNR responder, LPR/LPD, Custom Raw Port/Port9100, IPP, IPPS, FTP Server, SSL/TLS, POP before SMTP, SMTP-AUTH, APOP, TELNET server, SNMPv1, SNMPv2c, SNMPv3, HTTP/HTTPS server, TFTP client and server, SMTP client, ICMP, WebServicesPrint, LLTD responder
	IPv6 [2]:	(Turned off as default) NDP, RA, DNS resolver, mDNS, LLMNR responder, LPR/LPD, Custom Raw Port/Port9100, IPP, IPPS, FTP server, SSL/TLS, POP before SMTP, SMTP-AUTH, APOP, TELNET server, SNMPv1, SNMPv2c, SNMPv3, HTTP/HTTPS server, TFTP client and server, SMTP client, ICMPv6, WebServicesPrint, LLTD responder
Network type	Ethernet 10/100 BASE-TX Auto Negotiation (Wired LAN)	
Management utilities	BRAdmin Light [3]	
	BRAdmin Professional 3 [4]	
	Web BRAdmin [4] [5]	
	BRPrint Auditor [4] [6]	
	Web Based Management (web browser)	

1 For the latest driver updates, visit http://solutions.brother.com/.

2 If you want to use the IPv6 protocol, visit http://solutions.brother.com/ for more information.

3 If you require more advanced printer management, use the latest Brother BRAdmin Professional 3 utility version that is available as a download from http://solutions.brother.com/.

4 Web BRAdmin, BRAdmin Professional 3 and BRPrint Auditor are available as a download from http://solutions.brother.com/. They are for Windows® only.

5 Client computers with a web browser supporting Java.

6 Available when using BRAdmin Professional 3 or Web BRAdmin with devices that are connected to your client PC via a USB or parallel port.

Wireless network (for HL-5370DW)

Network board model name	NC-7600w	
LAN	You can connect your machine to a network for Network Printing.	
Support for	Windows® 2000 Professional, Windows® XP, Windows® XP Professional x64 Edition, Windows Vista®, Windows Server® 2003, Windows Server® 2003 x64 Edition and Windows Server® 2008	
	Mac OS X 10.3.9 or greater [1]	
Protocols	IPv4:	ARP, RARP, BOOTP, DHCP, APIPA (Auto IP), WINS/NetBIOS name resolution, DNS resolver, mDNS, LLMNR responder, LPR/LPD, Custom Raw Port/Port9100, IPP, IPPS, FTP Server, SSL/TLS, POP before SMTP, SMTP-AUTH, APOP, TELNET server, SNMPv1, SNMPv2c, SNMPv3, HTTP/HTTPS server, TFTP client and server, SMTP client, ICMP, WebServicesPrint, LLTD responder
	IPv6 [2]:	(Turned off as default) NDP, RA, DNS resolver, mDNS, LLMNR responder, LPR/LPD, Custom Raw Port/Port9100, IPP, IPPS, FTP server, SSL/TLS, POP before SMTP, SMTP-AUTH, APOP, TELNET server, SNMPv1, SNMPv2c, SNMPv3, HTTP/HTTPS server, TFTP client and server, SMTP client, ICMPv6, WebServicesPrint, LLTD responder
Network type	IEEE 802.11 b/g (Wireless LAN)	
Management utilities	BRAdmin Light [3]	
	BRAdmin Professional 3 [4]	
	Web BRAdmin [4] [5]	
	BRPrint Auditor [4] [6]	
	Web Based Management (web browser)	
Frequency	2412-2472 MHz	
RF channels	USA/Canada	1-11
	Japan	802.11b:1-14, 802.11g:1-13
	Others	1-13
Communication mode	Infrastructure, Ad-hoc (802.11b only)	
Data rates	802.11b	11/5.5/2/1 Mbps
	802.11g	54/48/36/24/18/12/11/9/6/5.5/2/1 Mbps
Link distance	70m (233 ft.) at lowest data rate	
	(The distance rate will vary upon environment and other equipment location.)	
Network security	128 (104) / 64 (40) bit WEP, WPA-PSK (TKIP/AES), WPA2-PSK (AES), LEAP (CKIP), EAP-FAST (TKIP/AES)	
Setup support utilities	SecureEasySetup™, Wi-Fi Protected Setup, AOSS™	

[1] For the latest driver updates, visit http://solutions.brother.com/.

[2] If you want to use the IPv6 protocol, visit http://solutions.brother.com/ for more information.

[3] If you require more advanced printer management, use the latest Brother BRAdmin Professional 3 utility version that is available as a download from http://solutions.brother.com/.

[4] Web BRAdmin, BRAdmin Professional 3 and BRPrint Auditor are available as a download from http://solutions.brother.com/. They are for Windows® only.

[5] Client computers with a web browser supporting Java.

[6] Available when using BRAdmin Professional 3 or Web BRAdmin with devices that are connected to your client PC via a USB or parallel port.

Function table and factory default settings (For HL-5380DN)

The factory default settings are shown in Bold with asterisks.

Level one	Level two	Level three	Options
NETWORK	TCP/IP	BOOT METHOD	**AUTO***, STATIC , RARP , BOOTP , DHCP
		IP ADDRESS=	[000-255] . [000-255] . [000-255] . [000-255] **[000-000] . [000-000] . [000-000] . [000-000]***
		SUBNET MASK=	[000-255] . [000-255] . [000-255] . [000-255] **[000-000] . [000-000] . [000-000] . [000-000]***
		GATEWAY=	[000-255] . [000-255] . [000-255] . [000-255] **[000-000] . [000-000] . [000-000] . [000-000]***
		IP BOOT TRIES	0 to 32767 **3***
		APIPA	**ON*** , OFF
		IPV6	ON , **OFF***
	ETHERNET	-	**AUTO*** , 100B-FD , 100B-HD , 10B-FD , 10B-HD
	FACTORY RESET	-	RESTART PRINTER?

C Appendix

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OpenSSL statements

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